F4U CORSAIR VS A6M ZERO-SEN

Rabaul and the Solomons 1943–44

MICHAEL JOHN CLARINGBOULD

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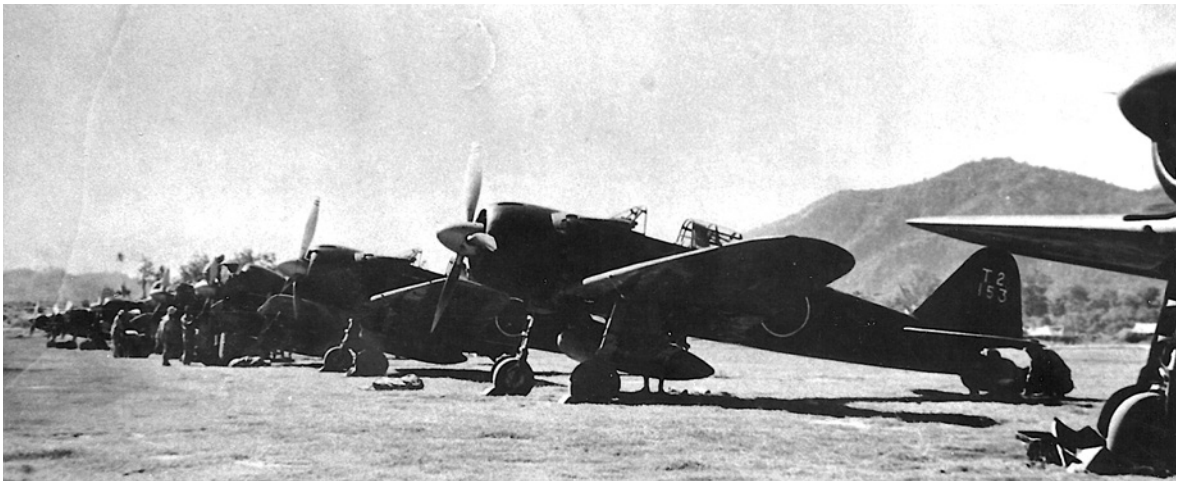
INTRODUCTION

It is ironic that whilst both the Corsair and Zero-sen were designed principally to fly from aircraft carriers, for the entire Solomon Islands campaign they met as land-based fighters. The contest over the Solomons and, later, Rabaul between the huge and powerful F4U-1 Corsair and the slighter but more maneuverable Zero-sen showcases the rapidly changing nature of air power in the Pacific War from 1943. The Corsair was able to take the fight to the Japanese instead of fulfilling the defensive role undertaken by the F4F Wildcat, bolstered by a mix of Guadalcanal-based fighters, throughout 1942.

The air war throughout the Solomons campaign was a complex affair for both sides that involved a plethora of different aircraft types, squadrons, and commands, with the latter rarely coordinating operations at unit level. Furthermore, aerial victory scores between the USAAF, US Navy, and the US Marine Corps were competitive, with the Royal New Zealand Air Force (RNZAF) being a partial player. As a result, with minimal cross-referencing of combat claims, many units wound up claiming the same victories. Higher aerial unit commands authorized the majority of claims at face value, failing to factor in the successes of ship-borne anti-aircraft batteries. Although these are the two foremost reasons behind the resultant inflated combat scores, there are others. Imperial Japanese Naval Air Force (IJNAF) Zero-sen pilots made more generous claims than their Allied counterparts for reasons that are not as clear, at least to this author.

The Zero-sen and Corsair were born of divergent design philosophies. The heavy, yet swift, Corsair packed massive clout, whilst the Zero-sen graced the other end of the spectrum – lighter, more agile, and highly maneuverable. With lesser firepower, it was, nonetheless, deadly in the hands of an experienced pilot, particularly at lower altitudes. By mid-1943 the gap in pilot proficiency between both sides was probably



A6M3 Model 22s from the 204th Kokutai are seen lined up at Lakunai in May 1943 with "The Mother" volcano in the background. When this unit commenced applying green camouflage in the field, it switched placement of the tail code into a two-line white calligraphy format with the T2 prefix centered above the three-digit identifier, as seen on T2 153. The 204th Kokutai spent longer in the frontline in the South Pacific than any other Zero-sen unit. It also saw the most combat, being a stalwart in Guadalcanal operations, and then playing key roles in Operations *I-Go* and *Ro-Go*, the Rendova attacks and, finally, the defense of Rabaul. (Tony Holmes Collection)

at its closest, although it subsequently widened as IJNAF losses mounted and experienced aviators were replaced by fledglings.

Regardless of the attributes of their respective fighters, few pilots from either side would have traded their mounts given the opportunity. Japanese fighter pilot culture and training emphasized maneuverability enhanced by individual skill – a philosophy that also underwrote the design of the Zero-sen. This contrasts with the US Marine Corps focus and emphasis on teamwork to fight proficiently but, above all, to survive and fight again. This was certainly borne out in the "hit and run" tactics favored by all Corsair units.

For both sides, the punitive tropical environment of the Solomons theater played havoc with airframe and hydraulic systems. This environment with its heat, humidity, and strong sun is difficult to conceptualize for most Westerners. It was often the case that engineers had to maintain or fix airframes using leather gloves, lest they get burned. The theater was also highly seasonal, with rain falling from November to April and the dry season running from May to October. Some thunderstorms were of sufficient power to push aircraft off taxiways, or even blow them over if not tied down.

The weather produced a unique problem for the less complex Zero-sen. Sometimes missions were aborted when thick mud stuck to wheel wells and prevented the undercarriage from fully retracting. Given the reliability of the Nakajima Sakae radial engine, this was the most common cause of Zero-sen aborts, explaining the photographs taken in-theater of A6Ms with their lower main gear covers sometimes removed.

Menacing tropical thunderstorms also defied both sides. No amount of technology or airworthiness would return an aircraft safely home if it could not negotiate the panoply of intemperate meteorology on offer. Rabaul's fighters were taught a severe lesson on January 25, 1943 when seven 252nd Kokutai Zero-sens failed to return from a patrol encroached by thunderstorms. Five aircraft were ditched offshore in various locations, their pilots rescued, but the remaining two disappeared. Eleven other fighters airborne at the time landed at Ballale. On this occasion, the weather, not the enemy, had proved lethal. Likewise, it is apparent that several Corsairs listed as missing throughout 1943 were more likely claimed by the weather than lurking IJNAF fighters.

A much-used VMF-214 F4U-1A at Barakoma, on Bougainville, in late 1943. As was common practice in the US Marine Corps, the last three digits of the aircraft's Bureau Number (BuNo) often comprised the fuselage "buzz" number. (Tony Holmes Collection)

In terms of the airfields fighter pilots called home, the Imperial Japanese Navy (IJN) had only the modest equivalent of US Naval Construction Battalions, better known as Seabees, whose impressive suite of heavy construction machinery carved a swathe of expansive and functional air bases as Allied forces advanced on the Japanese fortress of Rabaul.

The increasingly bombed runways at IJNAF airfields like Buin, Buka, Ballale, Munda, and even Rabaul alternated between mud, dust, or coral grit. Nearby crowded Japanese facilities were interrupted by cavernous craters created by bombs as big as 2,000 lbs, courtesy of USAAF bombers, or large-caliber shells (often radar-guided) from marauding US warships keen to unload their firepower in night raids. By comparison, the retaliatory raids levied by the IJNAF against Allied air bases were miniscule.

Yet despite the US Navy and US Marine Corps fighter units clearly having the technological advantage in-theater, an examination of combat results reveals that this did not necessarily "win the day" for F4U-equipped squadrons. The determining factor was pilot skill. 1Lt Ken Walsh of VMF-124 highlighted this point when he wrote:

> During a melee over the Russells, I suddenly found myself abeam of a Zero at approximately the same altitude, airspeed, and heading. As I turned for an attack, he executed a barrel roll and smartly placed himself within firing range about 500ft off my tail. His maneuver was executed with such rapidity and finesse that I felt stunned. There was only one means of escape, if I could make it. I made a "split-S" with full power, followed by a very hard turn to the right. He couldn't follow me.

An abundance of false myths survive about the Corsair, perhaps none more so than the nickname "Whistling Death" allegedly given to the fighter by the Japanese. This reference has been repeated so often in English language sources that it unfortunately continues to be perpetuated as fact. However, the nickname (or rather its Japanese

equivalent) exists nowhere in Japanese-language literature, interrogations, or veteran testimony. In truth, the moniker was first coined by Chance Vought's publicity department, then misattributed since.

However, perhaps the most glaring Corsair myth is that it achieved a highly advantageous kill ratio against the Zero-sen as soon as it entered combat, and this duly increased through to war's end. This alleged kill ratio in its favor has crept up as high as eleven-to-one in some publications! However, the fact is that for its first year in operational service commencing February 1943, the Corsair and Zero-sen attained close to parity against each other in combat. In fact, the Zero-sen scored slightly better against the Corsair for the first half of 1943, but the ratio gradually turned in favor of the American fighter as more experienced pilots were lost. This observation is made following a detailed examination of the claims and losses for IJNAF and US Navy and US Marine Corps units in the numerous combats which exclusively involved both types.

The embellished falsehood of the Corsair's superior scores has arisen as a result of most previous historians having accepted American combat claims at face value, instead of consulting Japanese operational records. Doubting Corsair *aficionados* can draw consolation in the fact that Zero-sen pilots made even more inflated claims against the Corsair. Another myth is that the F4U played an instrumental role in countering Operation *I-Go* (a nine-day aerial counteroffensive launched by the IJNAF on April 1, 1943 in an attempt to halt the Allied advances in New Guinea and the Solomons) during the first strike on Guadalcanal on April 7, 1943. Corsairs were in the mix, but only a limited number attained inconsequential results.

The first Corsair combat of February 14, 1943 proved a fiasco for all American participants, with a disproportionate total of nine aircraft being lost – one F-5A, four P-38s, two Corsairs, and two Liberators. In return, the IJNAF had a single Zero-sen shot down. The debacle, then causing much scuttlebutt among Guadalcanal's flyers, remains known as the "Saint Valentine's Day Massacre." The end result was that the escorting of bombers attacking distant targets such as Bougainville was delayed until Allied fighter tactics could be reappraised.

It seems prophetic in hindsight that in the first Zero-sen fight against Corsair, both sides lost a fighter to a mid-air collision. This one-on-one tussle remained extant for the next year while the IJNAF and the US Navy and US Marine Corps worked out how to exploit the best attributes of their mounts, and weaknesses of the enemy. A key difference was that a disproportionate number of downed Corsair pilots survived to fight another day – a key consideration more related to geography than technological advantage.

As the Allied campaign inevitably progressed towards the end goal – the neutralizing of Rabaul – the Corsair increased its numbers in-theater, while the cadre of veteran Japanese fighter pilots was methodically both culled and worn down in the daily grind of combat. Furthermore, there were extended times during the campaign (March 1943 being a good example) when the IJNAF focused its efforts on the New Guinea theater, thus giving some respite to Allied pilots in the Solomons, but none for their Japanese counterparts. All the above factors, and more, make for an interesting comparison of two airframes fundamentally designed for the same purpose, yet which offered such different virtues.

CHRONOLOGY

1938

June US Navy's Bureau of Aeronautics awards a contract to the Chance Vought Company for a prototype of the XF4U-1 fitted with the new Pratt & Whitney XR-2800 engine.

1939

February Construction of the XF4U-1 proceeds.

April 1 First flight by Mitsubishi 12-Shi Carrier Fighter (later designated A6M).

1940

May 29 Lyman Bullard Jr makes the first flight in the XF4U-1.

September 13 Combat debut of the Zero-sen in China by the 12th Kokutai.

October 1 XF4U-1 becomes the first single-engined US fighter to exceed 400mph in level flight.

1941

June Bureau of Aeronautics gives Chance Vought a contract for 584 F4U-1s, named Corsair.

1942

February 28 First long-range mission, against Port Moresby, flown by land-based Zero-sens in the Pacific theater.

June 24 Maiden flight of the first production-standard F4U-1.

July 9 Allied Joint Chiefs of Staff declare Rabaul to be the focus of the aerial campaign for the South and South-West Pacific areas.

July 29 First A6M3 Model 32 delivered to Rabaul.

July 31 US Navy receives first F4U-1.

The first production F4U-1 Corsair was BuNo 02170, seen here on October 24, 1942 fresh off the production line. Chance Vought test pilot Willard Boothby is in the cockpit. Assigned to VMF-112, this fighter was ditched in a lagoon on Efate Island, in the New Hebrides, on May 5, 1943 after its pilot ran out of fuel. (Author's Collection)

August	A6M5 Model 52 commences production.
October 26	VMF-124 is the first US Marine Corps squadron to be assigned the Corsair.
November 1	Major restructure of all IJNAF units.

1943

February	First A6M3 Model 22s equipped with Mk II long-barrel 20mm cannon reach Rabaul.
February 12	First F4U-1s arrive in-theater, with 17 from VMF-124 landing at Guadalcanal's Fighter 2 airfield from Espiritu Santo. Two Corsairs fly the first patrol in a combat zone that afternoon.
February 14	252nd Kokutai Zero-sen pilot FPO2c Yoshio Yoshida and VMF-124 F4U-1 pilot 1Lt Gordon Lyon collide with each other during a dogfight, resulting in the first Corsair combat loss.
February 20	US forces seize the Russell Islands unopposed and start building Pavuvu and Banika airfields.
April 7	First strike of Operation *I-Go* is launched by the IJNAF against Guadalcanal. Corsairs only play a token role.
May 10	The 251st Kokutai arrives at Rabaul with A6M3 Model 22s.
June 7	The 204th Kokutai mount 30kg bombs onto its Zero-sens for the first, and last, time in the fighter-bomber role.
June 30	US forces invade Rendova Island.
July (early)	Carrier fighter wings from *Junyo* and *Ryuho* arrive at Buin to operate as land-based detachments.
July 3	Conference held at Munda to determine the future defense of the area, presided over by Rear Admiral Minoru Ota, commander of the 8th Combined Special Naval Landing Force.
July 12	A 582nd Kokutai Zero-sen flies the unit's final mission from Buin.
July (mid)	The 204th Kokutai is amalgamated with remnants of the 582nd Kokutai and the 2nd Air Flotilla.
August 15	US forces land near Barakoma, on Vella Lavella.
September	The 253rd Kokutai returns to Rabaul from the northern Pacific.
September 1	The 251st Kokutai is reclassified as a nightfighter unit and equipped with the J1N1 "Irving."
September 17	Japanese forces abandon Kolombangara.
October 2	First combat mission flown by an F4U-2 nightfighter in the Pacific.
October 8	The 204th Kokutai is withdrawn from Bougainville airfields.
October 28	Admiral Mineichi Koga, commander of the Combined Fleet, authorizes Operation *Ro-Go* by sending the First Carrier Division to Rabaul from Truk on November 1.
October (late)	Both Buin and Ballale are effectively vacated by the Japanese.
November 1	US landings commence at Torokina.
November 5 and 11	US Navy carrier strikes against Rabaul.
December 17	First Corsair fighter sweep over Rabaul.

1944

January 26	All remaining 204th Kokutai Zero-sens at Rabaul are withdrawn to Truk.
February 19	The last major dogfight over Rabaul is fought by Zero-sens from the 253rd Kokutai.
February 20	IJNAF commences evacuation of all air units from Rabaul.

1945

August 18	Final IJNAF flight from Rabaul made by Ens Tokuya Takahashi in a E13A1 "Jake" floatplane, who drops medical supplies over Buka airfield.

DESIGN AND DEVELOPMENT

VOUGHT F4U CORSAIR

The evolution of the unusual gull-wing F4U Corsair can be traced back to February 1938 when the US Navy's Bureau of Aeronautics sent out a request for the next generation of carrier fighters. It specified that the maximum level speed of the aircraft had to be at least 350mph, with a stalling speed of just 70mph so as to allow it to operate safely from the flightdeck of a carrier. The fighter was to be armed with four machine guns and have a minimum combat range of 1,000 miles.

In June 1938 the US Navy awarded a contract to the Chance Vought Corporation to build a prototype of its V-166B design, created by chief engineer Rex Beisel and his team. The Bureau of Aeronautics specified neither powerplant nor design concept, besides the essential requirement that the fighter could be operated from a carrier. The overriding priority was the aircraft's maximum speed, to the extent that it became a standing joke amongst Vought's designers that the US Navy had specified only three requirements – speed, speed, and more speed. To achieve this, the Vought fighter would be fitted with the brand-new Pratt & Whitney XR-2800 Double Wasp engine providing 1,850hp – the most powerful American air-cooled radial engine then available.

Following creation of the mock-up in February 1939, construction of the XF4U-1 (the V-166B's naval designation) proceeded. Beisel and his engineers had created a fighter that combined the most powerful air-cooled radial engine then available with

The XF4U-1 makes one of its first test flights fitted with the R-2800 radial engine. The main difference between this prototype and production model Corsairs was the F4U-1's much longer nose. (Author's Collection)

a carefully streamlined design. To accommodate the large, 13ft 4in.-diameter Hamilton Standard hydromatic propeller needed to take full advantage of the XR-2800's power, the design team came up with the ingenious solution of using an inverted gull wing, with the landing gear placed at the lowest point of the wing. The latter also had to be foldable so as to allow the maximum number of aircraft to be embarked in the confined space of a carrier deck.

The anhedral of the inverted gull wing's center-section permitted the wing to mate with the fuselage at the optimal angle in order to minimize drag, thus obviating the need for wing root fairings. However, engineering the bent wing to absorb heavy landing load factors meant it was both heavy and technically intricate to construct. The wing root sections attached to the fuselage accommodated the oil cooler for the engine and air inlets for the XR-2800's two-stage supercharger, thus taking advantage of the wings' wide chord to house these features rather than resorting to protruding air scoops.

The prototype undertook its maiden flight with company test pilot Lyman Bullard Jr at the controls on May 29, 1940, although he soon landed again when the failure of an elevator trim tab caused airframe flutter. With these teething problems resolved, the XF4U-1 became the first single-engined US fighter to fly faster than 400mph on October 1, 1940 during a demonstration flight for the Bureau of Aeronautics.

While the prototype demonstrated an excellent rate of climb, its control surfaces could be damaged in high-speed dives and recovery from the specified maximum of two-turn spins was not achievable unless an anti-spin chute was deployed. This control issue had been highlighted by the Bureau of Aeronautics from the fighter's inception, with the cause of the problem being the shape of the inverted gull wing, which interfered with elevator authority.

Formal acceptance trials commenced in February 1941, and the US Navy awarded Vought a contract for an initial production of 584 F4U-1 fighters, which were allocated the official name "Corsair" to honor the provenance of the Chance Vought

The XF4U-1 in April 1941. The prototype featured two 0.30-cal machine guns in the nose firing through the huge 13ft-diameter Hamilton Standard propeller and a 0.50-cal machine gun in each wing. (NARA)

O2U scout that originally bore the name in the late 1920s. The first production F4U-1 performed its maiden flight on June 24, 1942.

The recently developed spot-welding technique was applied to bond the airframe, thus eliminating widespread use of rivets. This manufacturing process also facilitated a lighter structural framework comprising main bulkheads and only four longerons. Large Duralumin sheets had stiffeners spot-welded to the inboard sides, after which they were shaped by stretching them over formed templates, thus enabling the complex curvatures required in some structures. The end result was a lighter and more robust fuselage than the standard riveted semi-monocoque construction used in most fighters of that period.

The Corsair was also the last US-produced fighter aircraft to use fabric to cover both sides of the outer wings aft of the main spar and armament bays and the ancillary controls, including the elevators, whose frames were constructed from plywood.

The US Navy received its first F4U-1 on 31 July 1942, and it immediately became evident that the fighter's framed "birdcage" canopy hampered visibility for deck taxiing. The elongated nose and rearward-slanted attitude of the fuselage also made it difficult for pilots to see straight ahead. These issues, combined with the enormous torque of the Double Wasp engine that proved a handful for inexperienced pilots, quickly led to the fighter being dubbed "hog," "hose nose," and "bent-wing widow maker."

F4U-1s at various stages of assembly within the Vought-Sikorsky plant at Stratford, Connecticut, in early 1943. Although the company would build 4,699 F4U-1/1As in total, only a small number of initial production Corsairs were fitted with "birdcage" canopies. (Tony Holmes Collection)

Suitability for carrier operations provoked ongoing variations to the main gear, tailwheel, and arrestor hook. The starboard wing also tended to stall, then drop briskly, during slow approaches – a particularly dangerous trait during carrier operations. Furthermore, sudden throttle advancement during go-arounds

caused the left wing to stall and drop forcefully, often flipping the fighter onto its back with the resultant excessive power. These hazardous characteristics were later resolved via the addition of wooden stall strips to the leading edge of the outer starboard wing, allowing both wings to stall concurrently. The Corsair was then able to approach sufficiently slowly with flaps fully deployed at 60 degrees.

For the US Marine Corps, the Corsair's carrier woes were irrelevant. In the Solomons, its land-based units needed a fighter that was faster and boasted a better range than the F4F Wildcat, and they had long runways from which to fly missions. Most of the issues that disqualified the F4U-1 from carrier operations with US Navy units thus did not apply to land-based US Marine Corps squadrons. Under such circumstances, "Marine Air" pilots readily took to the new fighter. They immediately saw how huge the Corsair looked in comparison with the F4F, the Vought fighter being three feet taller than the chunky Wildcat and a ton-and-a-half heavier. VMF-124 was the first US Marine Corps unit to receive F4U-1s, and its pilots nicknamed the aircraft the "blue ball bat with inverted gull wings" shortly after examples reached the unit in October 1942.

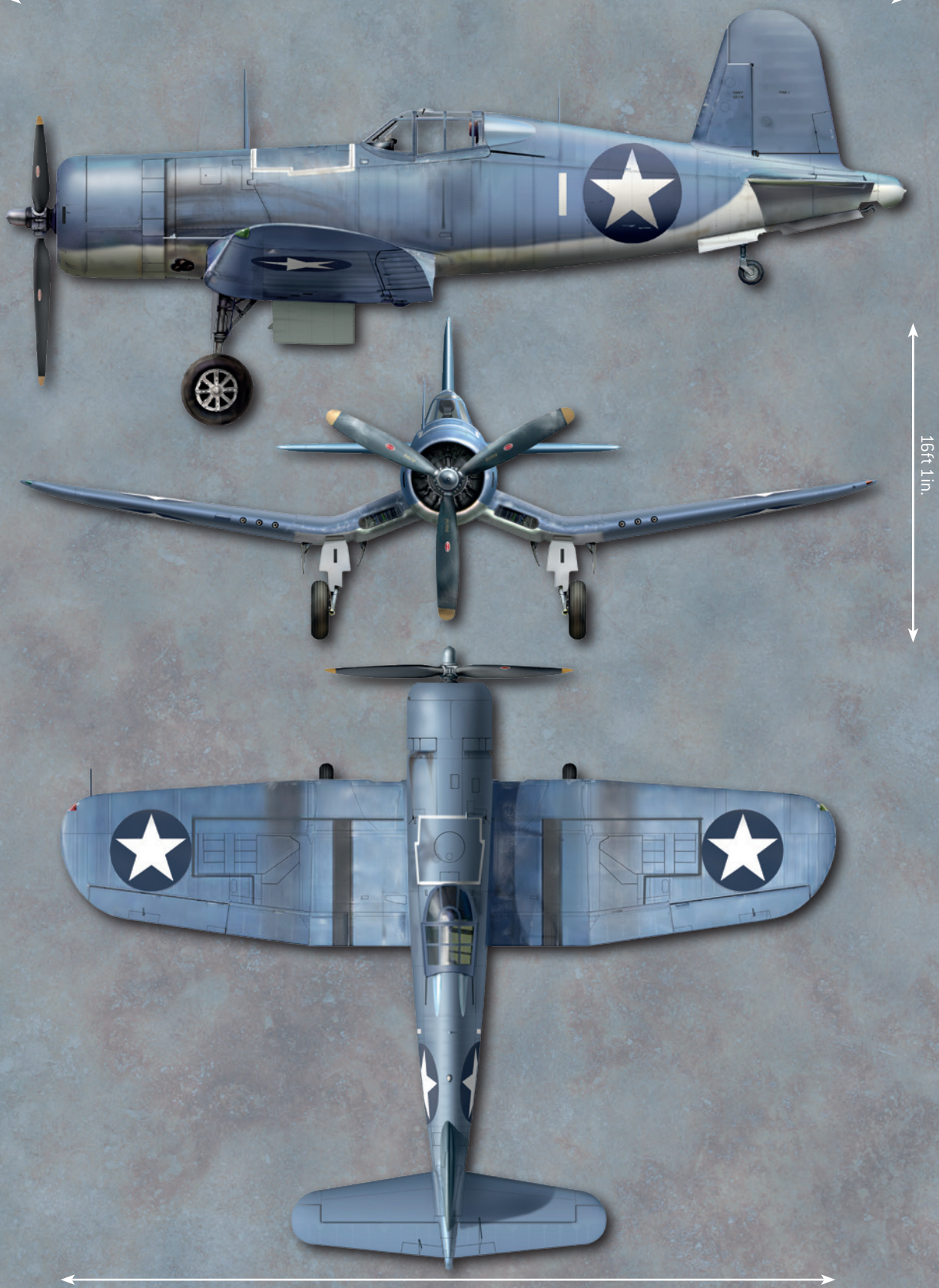
The only other "birdcage" Corsair to see frontline service, and possible action against A6Ms in the Solomons, was the F4U-2 nightfighter. This aircraft was a basic modification of the original F4U-1, with an air interception radar set installed on the outer section of the starboard wing. The antenna was housed in a bulbous radome placed two-thirds of the way along the leading edge – the streamlined radome barely affected the Corsair's sleek aerodynamics. The outermost port machine gun was removed to redress the lateral balance. A six-inch radar scope was also added to the center of the main instrument panel. The first F4U-2 flew on January 8, 1943. The F4U-2 was the first American single-engined fighter to be specifically modified as a nightfighter.

In order to address the vision issues arising from frontline operations with the F4U-1, Vought quickly ditched the "birdcage" canopy for a bubble canopy, which improved visibility for landing, and for combat. An extended tailwheel also improved visibility on landing and directional stability on the ground. Further improvement in visibility came from raising the pilot's seat seven inches and increasing the vertical adjustment. Vought also expended considerable effort on modifying the Corsair's oleo struts, which were re-designed with improved oil valves and increased air pressure to reduce the tendency for the fighter to bounce on landing.

With these improvements, the fitting of the wooden stall strips noted earlier and the implementation of revised landing techniques based on Royal Navy experience with the fighter, the Corsair's landing characteristics were judged acceptable, and in April 1944 the US Navy approved the Corsair for carrier operations. By then of course land-based F4U units had prevailed in the Solomons.

Vought-Sikorsky engineers test hydraulic lines for the undercarriage of a recently completed F4U-1. The main gear legs rotated into the wing, using a similar swivel system to the one fitted to the P-40 Warhawk. The folding mechanism installed in the wings added considerable extra weight to the Corsair. (Author's Collection)

F4U-1 CORSAIR



MITSUBISHI A6M ZERO-SEN

Japanese aircraft designer Jiro Horikoshi created the 12-Shi Carrier Fighter to meet the demands arising from the air war over China. Here, the Zero-sen immediately proved itself superior against Soviet Polikarpov I-15 and I-16 fighters. In his post-war autobiography, Horikoshi claimed that he did not anticipate the A6M having to fight over such a vast tropical theater when war broke out in the Pacific. Nonetheless, his design soon developed into the A6M2 Model 21 – the most ubiquitous Zero-sen variant which was used as a land-based fighter in the Solomons after having already acquired a reputation for its reliability in New Guinea in 1942.

In early 1943, the Model 21 still represented modern technology, and through necessity the aircraft proved adaptable to land-based operations; the fighter retained its arrestor hook to maintain center of gravity integrity. The Model 21's Nakajima Sakae 12 engine, bolstered by a single-stage supercharger, was reliable, and in the Solomons it enabled the Zero-sen to intercept targets flying at 20,000ft or higher with ease. The fighter's large 72-gallon under-fuselage drop tank, jettisoned with a spring retainer unit, extended the aircraft's range to a combat radius of more than 500 miles when land-based. However, this resourceful feature meant pilots were forced to fly fatiguing long-distance missions.

As the Solomons campaign progressed, it became clear that the Zero-sen's performance had fallen behind its US counterparts. The new generation of American fighters arriving in-theater during 1943 possessed heavier armament, better high-altitude performance, high-speed maneuverability, and improved airframe protection. Additionally, it had become apparent as early as 1942 that Japan's enemies were producing robust engines of superior performance. Articles appearing in the American technical magazines of the time alluded to the increased size and power of a new generation of radial engines.

Meanwhile, Nakajima continued to develop its Sakae 12. The resultant upgraded Sakae 21 incorporated a two-stage supercharger providing 1,130hp for take-off. This represented an appreciable improvement over the 950hp Sakae 12, and Mitsubishi's engineers needed only to make basic structural modifications to accommodate the

OPPOSITE

On May 13, 1943, 15 of VMF-124's Corsairs, led by Maj William Gise in this aircraft, departed Guadalcanal's Fighter 1 at 1210 hrs to intercept incoming Japanese aircraft. VMF-124 fought against Zero-sens from the 204th Kokutai, and Gise went missing during the action. This Corsair (BuNo 02178) had been delivered to Espiritu Santo aboard the aircraft transport USS *Kitty Hawk* (APV-1), where it was unloaded on the afternoon of January 24, 1943, then later flown to Guadalcanal. The aircraft is shown as it appeared on the day of its loss. Originally, VMF-124 painted its squadron fuselage numbers in black, but later moved them rearwards and reapplied them in white for better visibility, while leaving the original smaller cowl numbers in black. Gise chose the "1" to represent his position as squadron CO. The national markings consist of the early five-pointed star insignia, and the two-tone color scheme was applied at the Chance Vought factory.

Gifted engineer Jiro Horikoshi (third from right) poses with other members of the team from Mitsubishi Heavy Industries that would subsequently design the 12-Shi Carrier Fighter for the IJNAF. Their aircraft duly evolved into the A6M Zero-sen. This photograph was taken in July 1937 at around the time Horikoshi was asked to design the new fighter, despite his previous aircraft, the A5M "Claude," having only just entered service. (Tony Holmes Collection)

A6M2 ZERO-SEN MODEL 21

Sakae 21 into the Zero-sen airframe. The cowling and engine mounts were duly remodeled to allow for the new engine's increased size and weight. However, in order to make room for the powerplant's accessories, the fuselage fuel tank had to be reduced in capacity. A commensurate range reduction was worsened by the fact that the Sakae 21 also consumed more fuel than the earlier engine.

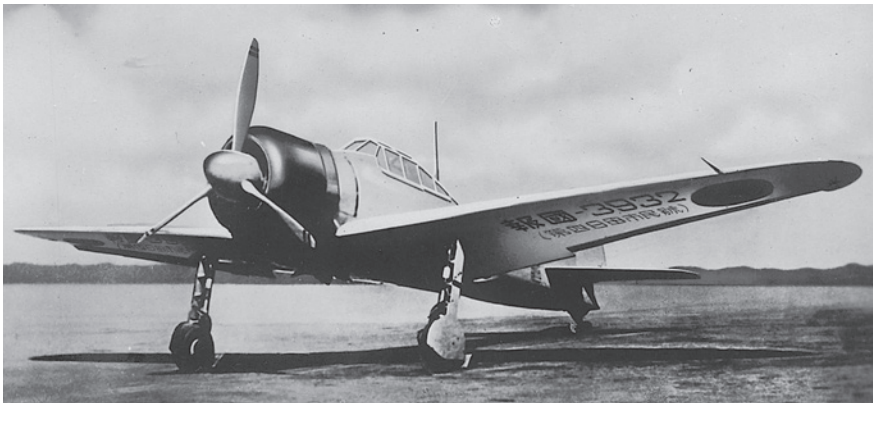
The next design revision of the Zero-sen removed the folding wingtips and squared the wings, thus reducing the wingspan and improving the fighter's roll rate. At the request of Rabaul's land-based units, the 20mm wing cannon had the ordnance capacity raised from 60 rounds in the Model 21 to 100 rounds per weapon. The revised aircraft became the A6M3 Model 32, which first entered service in New Guinea in August 1942 with the 2nd Kokutai, complementing Rabaul's Model 21 inventory.

Due to the "hit and run" tactics being employed by units equipped with the new era of US fighters – specifically the P-38 Lightning and F4U Corsair – from early 1943, Rabaul-based fighter kokutai requested weaponry with improved rates of fire for their Zero-sens. Unwilling to wait for an official response from Japan, the kokutai performed their own armament modifications and then conducted experiments at a firing range not far from Vunakanau airfield. Scant details survive of these trials, although the diary of Vice Admiral Jinichi Kusaka, commander of the 11th Air Fleet at Rabaul, refers to the 204th Kokutai having its own weapons testing center where it unsuccessfully trialed, *inter alia*, the use of 30mm cannon in a Zero-sen airframe. These experiments were finally abandoned when three men were killed during test firing.

Mitsubishi proved incapable of developing a new generation fighter during 1943, which left the IJNAF with little option but to again explore ways to upgrade the Zero-sen. Despite the more powerful engine, the Model 32 proved a disappointment. Its modest increase in speed was offset by reduced range, the fighter still lacked pilot protection and extra fuel tanks had not been provided. Rabaul's reaction was to request an increase in fuel capacity so that its fighters could reach Guadalcanal, and this resulted in the hurried creation of the A6M3 Model 22, which boasted the greatest range of any Zero-sen model through the fitment of 12-gallon tanks in the restored rounded wingtips. All 50 Model 22s assigned to Rabaul in February–March 1943 were also equipped with the Type 99-2 Mk II long-barrel 20mm cannon, which boosted the Zero-sen's firepower.

OPPOSITE

This Nakajima-built Zero-sen was one of seven from the 252nd Kokutai downed by a tropical front on January 25, 1943. Two went missing, three ditched near Cape Esperance, one pilot beached his Zero-sen on Choisel, and this one was landed wheels-up on the beach near Visale village on Guadalcanal's northwest tip near Cape Esperance. The 252nd and 582nd Kokutai were both part of the 1st Air Attack Force when this aircraft was lost, and they adopted the numerals "1" and "2", respectively, as a prefix to the three-digit tail codes seen on all Zero-sens in-theater. Abnormally, these tail codes were applied without hyphens. The three-digit individual aircraft number followed immediately without space separation, resulting in the tail code 1148 in this case. A signature marking on this aircraft was the oversized yellow rectangle on the wing leading edges – a feature that more commonly appeared on Zero-sens of the 582nd Kokutai.



This heavily retouched photograph was one of the first released by the IJNAF of its new A6M Type 0 Carrier Fighter in 1940. The aircraft's large wing, low wing loading, and long ailerons gave the Zero-sen exceptional maneuverability, as Allied pilots would discover to their cost in the South Pacific. (Tony Holmes Collection)

This A6M2 Model 21 was one of seven 252nd Kokutai Zero-sens that force-landed near Guadalcanal's Cape Esperance on January 25, 1943. (Author's Collection)

The A6M3 Model 32 featured squared-off wingtips following removal of the A6M2's folding wingtips. This modification reduced the wingspan and improved the fighter's roll rate. Examples began to appear in the South Pacific from August 1942, and this captured A6M3 was evaluated by the Allies in mid-1943. The aircraft is fitted with a 72-gallon drop tank – standard configuration for Zero-sens in the Solomons. (Tony Holmes Collection)

Meanwhile, Mitsubishi had tasked further Zero-sen airframe development to engineer Mijiro Takahashi so that concept designer Jiro Horikoshi could focus on the creation of the new generation 14-Shi interceptor, the J2M Raiden. Around mid-1943 Takahashi considered several modifications to the Model 32 to improve both speed and armament. To achieve this, he selected a shorter wingspan with round wingtips and increased the thickness of the wing chord so that its strength permitted a maximum diving speed of 410mph. The upgraded fighter, designated the A6M5 Model 52, retained the Sakae 21 engine. Eventually built in greater numbers than any other model of Zero-sen, the Model 52 went into production from August 1943.

Mitsubishi continually tried to improve the A6M through to war's end, and at various junctures thicker wing skins were introduced, pilot protection was improved, and armament changes were made to the 20mm cannon. These alterations added considerable weight to the airframe that led to a loss of maneuverability. Model 52s with their shorter wingspans were first delivered to units in Rabaul at the end of October 1943, and they were more ubiquitous in service from here than has generally been recognized.

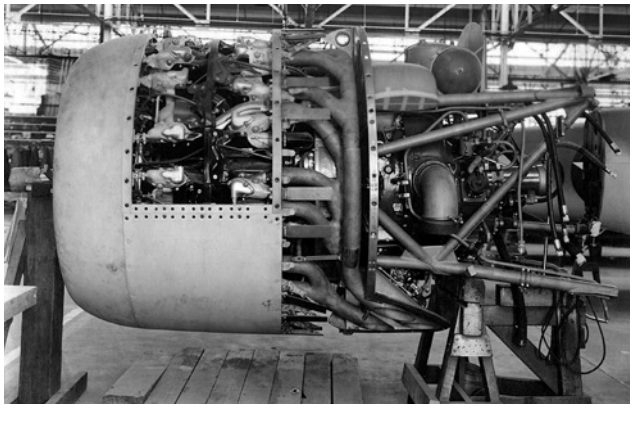
Throughout this design evolution, Mitsubishi's engineers consistently lobbied to replace the Sakae 21 with the company's new Kinsei radial, which could produce around 1,500hp. The IJNAF unyieldingly rejected the initiative, however, as its priority was simply increased production. They could afford no initiative which, regardless of its potential, would disrupt the urgency of Zero-sen production. IJNAF command stuck to this position throughout the concluding months of the Pacific War, leaving A6M pilots at a distinct disadvantage in aerial combat with US fighters.

TECHNICAL SPECIFICATIONS

F4U CORSAIR

The production F4U-1 featured several major modifications from the XF4U-1. Upgrading the armament to six wing-mounted 0.50-cal Browning M2 machine guns, along with an ammunition capacity of 400 rounds for the inner pair and 375 rounds for the outer gun, meant relocating the wing fuel tanks to within suitable center of gravity limitations. The displaced fuel was moved to tanks in the fuselage ahead of the cockpit. In the Solomons, the Mk 8 reflector gunsight was used to initially boresight the guns to a convergence of 250 yards, although discussions among pilots after the first aerial engagements with the enemy saw this increased to around 300 yards. The rate-of-fire was 800 rounds per minute, using a mixture of incendiary, tracer, and ball ammunition.

The forward fuselage was attached to the wing center-section at the main spar. The engine's tight-fitting cowling boasted 18 cowl flaps, with an engine accessory compartment covered with detachable panels permitting easy access to the R-2800, its supercharger, and accessories. Fuselage size was predicated by



The R-2800 engine layout on the first production F4U-1 Corsair. The ignition system as originally installed caused misfiring at high altitudes due to low pressurization in both distributors. This caused the first Corsair loss in the Pacific on February 1, 1943 when an aircraft from VMF-124 was ditched offshore Espiritu Santo by 2Lt Ken Walsh during a post-assembly test flight. (Author's Collection)

engine diameter. The fuselage was structurally divided into front, mid, and rear sections. Although the cockpit was located considerably aft, once the Corsair was airborne it offered an ample field of view ahead and downward due to the bend in the wings. The cockpit had no floor, only footrests positioned ahead of the rudder pedals, along with a small teardrop-shaped Perspex window which allowed vision directly beneath. The mid-section accommodated radio equipment and electrical relay systems, whilst the rear section housed the tailwheel bay and a retractable arrestor hook.

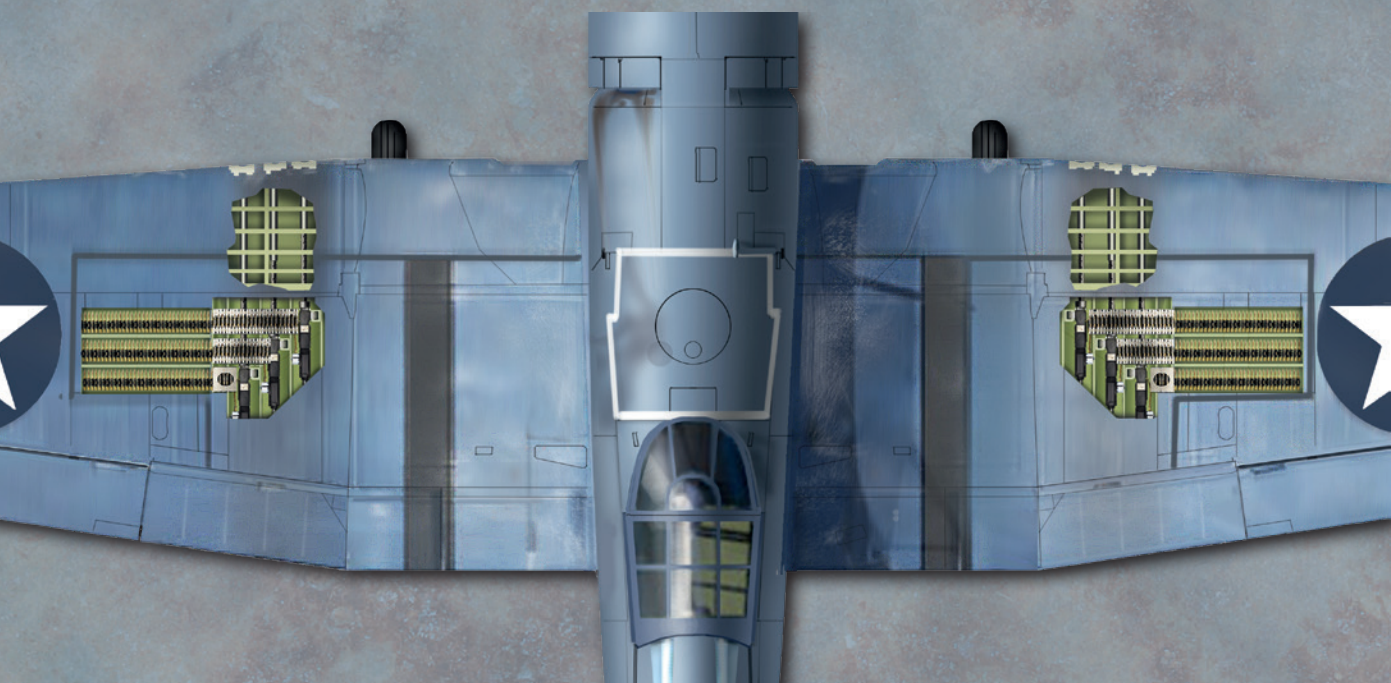
The main gear oleos each had strut doors that closed when the undercarriage retracted, first rotating through 90 degrees during retraction. Finally, a pair of rectangular doors enclosed each wheel well, leaving a streamlined wing. The wings themselves had one main spar, with an auxiliary rear spar in the wing center section. The outer wing sections were hydraulically folded over the canopy for maintenance and storage on carrier decks. The undercarriage legs, with their flat forward-facing strut covers, could also act as air brakes if required – the pilot had the option of selecting to lower the main gear without the tailwheel and arrestor hook. However, in practice, this option was rarely used.

A life-raft was stowed in a recess behind the pilot's headrest. To keep the Corsair aerodynamically as clean as possible, the designers made no provision for external

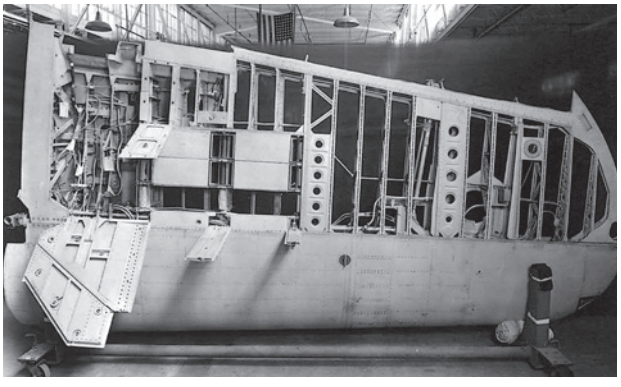
F4U-1 CORSAIR ARMAMENT

All models of the F4U-1 Corsair to see combat in the Solomons were armed with six 0.50-cal Browning M2 fixed-mount machine guns, three per wing, which fired just outside the propeller arc. Each solenoid-activated gun was fed with 400 rounds from square canisters accessible via Tzus-fastened panels in the top surface of the wings.

Each canister provided around 30 seconds of firing time. The guns were covered with reinforced panels, and were numbered one to six from port to starboard. The gun mounts, bolted through reinforced extrusions with AN-series bolts, were designed for easy removal in the field for servicing purposes.



auxiliary drop tanks. Instead, the F4U-1 had unprotected outer leading edge tanks forward of the front spar that had a CO_2 purging system. However, these tanks had no jettison system, and thus relied on the fuel contained within them being depleted first. Residual fumes represented a fire hazard, particularly with fabric covering the wing immediately aft of the front spar. These tanks had no gauges either, and it was common practice to run them dry before switching to the main tanks, causing a brief loss and then surge of engine power.



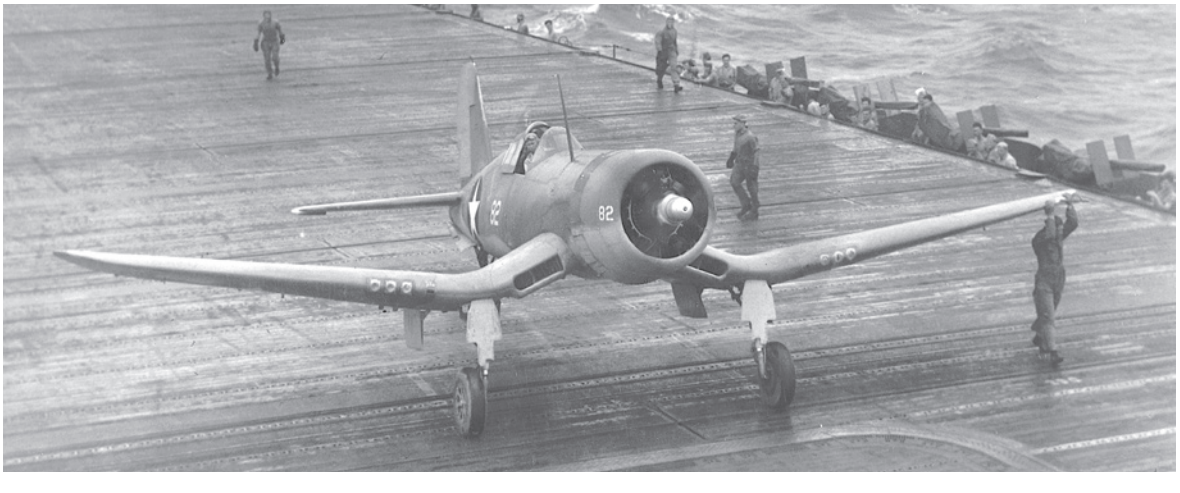
This photograph of a partially completed outer wing panel for an F4U-1 clearly shows the reinforced extrusion to brace the gun mounts, and associated space for ammunition canisters. The flush-riveted wing has a round hole as a fuel filler for the outer fuel tank. (Author's Collection)

The ailerons and flaps were subdivided into three separate sections – a necessary arrangement due to the wing's bent shape and the folding outer panels. Two flap sections were carried by the wing center section, and one by the outer wing panel. They were slotted deflector flaps, which had first been used in the OS2U Kingfisher observation floatplane. The flaps were fitted with deflector plates attached to their leading edges. When the flaps were deployed, these plates deflected the airflow, permitting greater lowering angles to be achieved without the wing stalling. The flaps were all-metal, except for the outer sections, which were fabric-covered.

As previously noted, it became evident from early carrier trials that the Corsair's aft cockpit and long nose made landings particularly precarious for inexperienced pilots. Leaking hydraulic fluid from the cowl flap actuators routinely covered the windscreen, further compounding visibility issues during landing approaches. The long undercarriage oleos produced vigorous rebound, badly bouncing the aircraft on carrier flightdecks particularly during heavy landings.

Permanently securing the top cowl flaps directly in front of the windscreen resolved the hydraulic fluid issues, but the excessive play in the undercarriage had no quick fix. Eventually, a bleed valve was integrated into the gear legs to release hydraulic pressure on first impact. Nonetheless, these problems meant that the US Navy did not clear the Corsair for carrier use until late 1944. This facilitated the release of "surplus" F4Us

After disappointing carrier-landing trials in late 1942, the US Navy declared the Corsair unsuitable for carrier operations. Lt Cdr "Swede" Vejtasa, an experienced pilot and F4F Wildcat ace, tested the Corsair on board USS *Enterprise* (CV-6) and was less than pleased, coming up with a list of 18 concerns. (NARA)



Mechanics prepare a Corsair for flight at Guadalcanal by pulling the fighter's substantial Hamilton Standard propeller through at least three revolutions in order to avoid oil hydraulic lock. As can be seen here, this was a two-man job. (Tony Holmes Collection)

to the US Marine Corps for land-based operations.

Before the pilot started his fighter's R-2800 radial engine, the F4U's substantial Hamilton Standard propeller was pulled through at least three revolutions by groundcrew in order to avoid oil hydraulic lock – this was a two-man job due to the size of the propeller. The engine was then started with a cartridge. Hinge pins locked the folding wings, and these had to be removed prior to the fighter taxiing out.

The Corsair's multifarious hydraulic controls and diverse ancillary systems caused headaches for field maintenance. Too much braking produced excessive heat in the brake pads, and this issue was exacerbated in the hot tropical climate. S-turns were often made whilst taxiing to enable forward visibility, and the cowl flaps were always left open when the engine was running on the ground so as to lower cylinder head temperature. The gyros often tumbled in the early models, discouraging instrument flying. Gun ports were taped over on the ground to keep out dust, and so much torque was generated on takeoff that full right rudder was required to counteract the swing as speed built up.

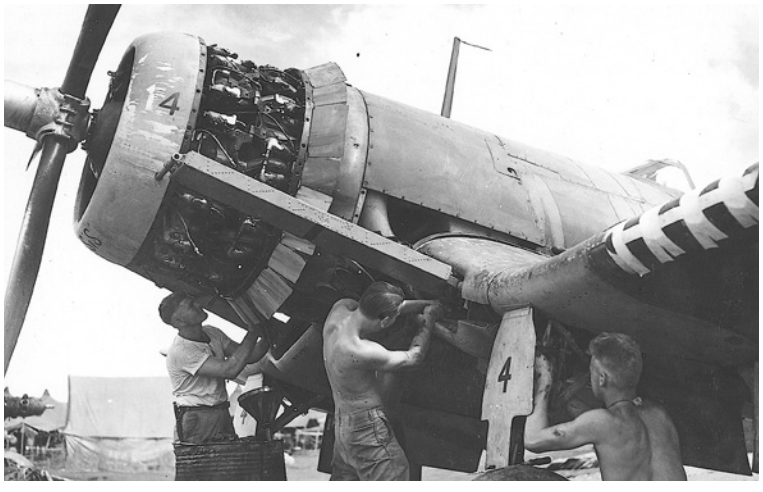
Despite flying arguably the fastest fighter in-theater, Corsair pilots in the Solomons soon discovered to their frustration that their aircraft became just another "bomber without a tail gunner" when they had to scissor in order to remain in formation during escort missions. If a Zero-sen approached, the F4U pilots would attack it. However, they were instructed to return quickly to the bomber formation and stay with them throughout the mission. During such sorties, the Corsair's rear-view mirror proved especially useful.

Another bugbear was that oxygen masks often proved hard to adjust, and pilots were forced to alternate between three different types. The guns also failed at altitudes, usually due to their firing mechanisms being frozen. Ordnance sections soon invented a mixture of oil and kerosene that resolved the problem. Gun heaters were of little use and, in fact, later Corsair models abandoned them entirely. Radios generally worked well, and sometimes F4U pilots would hear calls made from Guadalcanal when they were overhead Bougainville some 400 miles away. The Corsair was equipped with a ZB homing device, but pilots rarely had cause to use it due to easy navigation over "The Slot" (New Georgia Sound). Armor plating proved effective, with few pilots getting badly shot up – the legs were found to be the most vulnerable part of the body, should the cockpit area be hit by enemy fire.

OPPOSITE

Workers at a Sakae radial engine factory in Japan read the alleged superior victories achieved by Zero-sen units in the defense of Rabaul in November 1943. Such sparse facilities were in stark contrast to the heavily industrialized factories in the USA churning out R-2800 engines for F4Us. (Author's Collection)

As the first Corsair squadron to operate in-theater, VMF-124 initially struggled to contribute to the fight for aerial supremacy in the Solomons due to a shipping mix-up that delayed the arrival of critical spare parts and the bulk of the ground echelon at Guadalcanal for more than a month. Fortunately, civilian Vought-Sikorsky representative Malcolm Raffo was present, and his advice contributed to keeping an average of 14 out of 20 Corsairs airworthy at Guadalcanal during this critical time. Several Vought civilian representatives also subsequently undertook duty tours in-theater, including Jack Hospers, who worked alongside VF-17 CO Lt Cdr Tom Blackburn. The representatives imparted knowledge on technical changes, upgrades, and modifications to the Corsair airframe.



Mechanics from VMF-124 work on a Corsair's engine and oil cooler at Fighter 2, on Guadalcanal, in the spring of 1943. Note the walkway affixed to the cowling and oil cooler inlet to permit direct access to the engine. (Tony Holmes Collection)

Capriciously, the various issues that initially plagued the F4U in operational service meant that in the fighter's first few months of combat, the technological advances debuted by the Corsair were overshadowed by the loss of a disproportionate number of aircraft due to both technical and tactical failures. The first of these losses in the Pacific theater occurred on February 1, 1943 when future VMF-124 ace Lt Ken Walsh was forced to ditch his aircraft whilst conducting a test flight shortly after the squadron's arrival in the Solomons. His fighter had suffered ignition system failure at high altitude due to pressurization problems with the aircraft's distributors – a common problem in early Corsairs. Such bugs were eventually ironed out in-theater, but not before a number of F4Us had been lost in operational accidents.

A6M ZERO-SEN

Throughout all models, the Zero-sen's Achilles' heel was its lack of self-sealing tanks – a collective flaw in all Japanese aircraft designs of the era. This meant that well-placed incendiary rounds could destroy an A6M both quickly and spectacularly.

INJAF engineers tried to carry out inspections of Zero-sens after every mission, and attempted more comprehensive 300-hour services that took a week to complete. Ideally, the Sakae 12 was subjected to a complete strip-down and ten-day overhaul at the

Engineers prepare to remove the cowling from a (then) relatively rare A6M3 Model 22 at Lakunai in mid-1943. The Model 22's Sakae 21 engine was usually the subject of a major overhaul every 400 flying hours. (Author's Collection)

Groundcrew at Vunakanau sort and belt 7.7mm ammunition for loading into the Type 97 weapons mounted in the Zero-sen's upper fuselage decking and synchronized to fire through the propeller. (Author's Collection)

400-hour mark. However, this was not always possible with the incessant demand for serviceable aircraft. In the South Seas frontline, relentless combat and Allied bombing attacks put pressure on aircraft serviceability. Long supply chains were interrupted, making spares hard to source, and like their Allied counterparts, Japanese engineers, through necessity, often cannibalized parts from other airframes. This resulted in a suite of hybrid field modifications at Rabaul, the most ubiquitous of which pertained to the Model 52 series.

These late models had become omnipresent at Rabaul from the fall of 1943 onwards, and they often underwent field modifications. Mitsubishi-built Model 52s from MN 3904 through to MN 4007 left the factory with A6M3 cowl collector exhaust systems, and not the individual exhaust stubs synonymous with the later Model 52s. Given the paucity of spares in the field, several early Model 52s and even a handful of Model 22s were retro-fitted with multiple-stack exhaust stub systems. Similarly, other engine exhaust collector and aerial spinner changes were made in the field.

Some Rabaul-based units used the Model 22 exclusively, a good example being the 251st Kokutai, which was reformed from the famous Tainan Kokutai after the November 1, 1942 IJNAF restructure. It received new Model 22s on which to train at Toyohashi in early 1943, this aircraft arriving straight from the factory. The 251st Kokutai returned to Rabaul from Yokosuka via Truk, with its Zero-sens conveyed aboard the escort carriers *Unyo* and *Chuyo*. In Truk Lagoon, the Model 22s were craned onto barges and then ferried ashore, before being flown to Rabaul in two groups totaling 58 Zero-sens.

The first of the 251st Kokutai's Model 22s landed at Lakunai on 10 May 1943 after an uneventful 785-mile flight at 150 knots. The Model 22s flew two long-distance missions on May 21 and 22 over Bulolo–Wau, southwest of Lae. Both flights underlined the Model 22's superior range – a capability they would soon exercise in the Solomons.

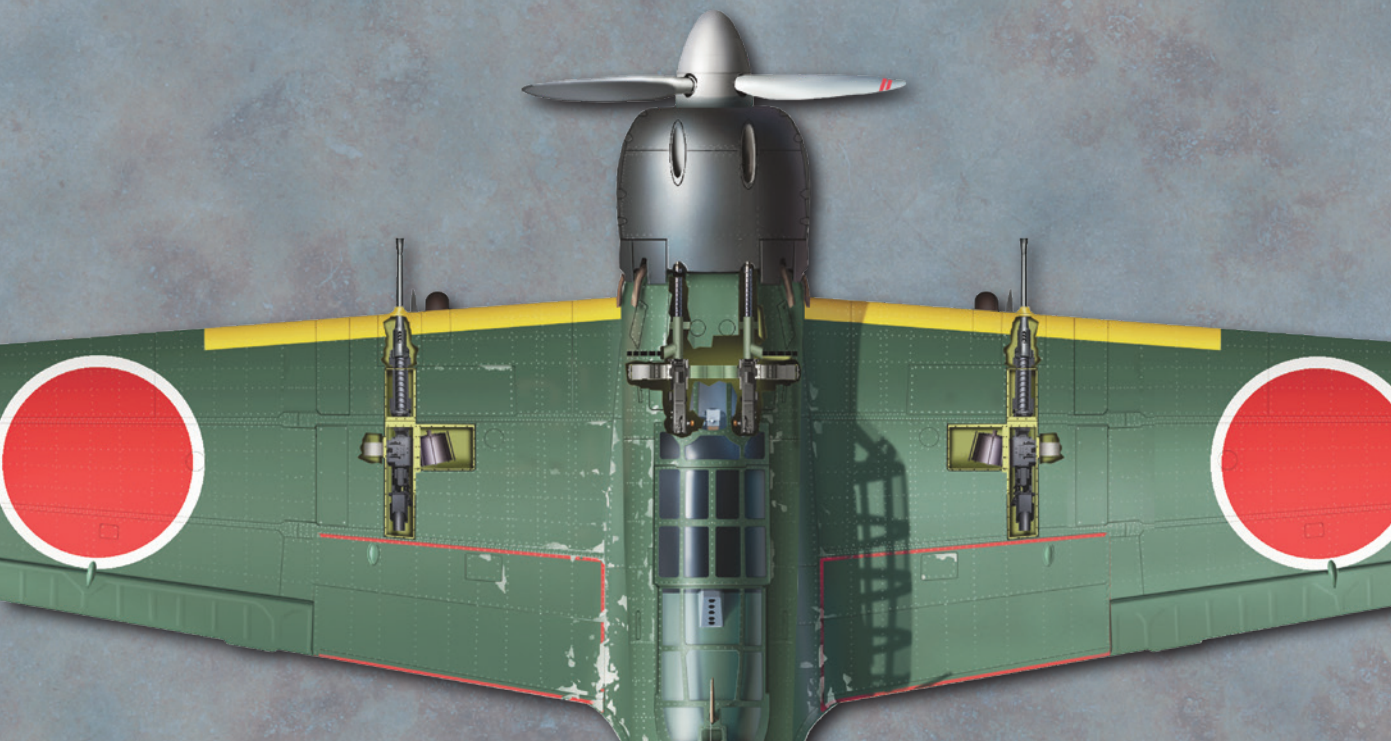
The Sakae 12 was sufficiently dependable that few Zero-sens were lost to engine failure. Although the fighter was relatively easy to service aside from the engine, and IJNAF engineers were practiced at maintaining their mounts, their best efforts were routinely hampered by the lack of support facilities at forward bases. They also suffered from the effects of growing aerial attacks on their airfields.

Factory-installed radio systems included both the Type 96 radio and the Type 1 Radio Compass, with the transmitter and receiver being slung in bungee cord shock-mounts that provided simple but effective protectors. The radios were notoriously ineffective, however, particularly in a humid tropical atmosphere where shielding and grounding problems restricted clarity of transmission. The exasperation of IJNAF engineers to resolve the issue saw some units remove all radio equipment completely, leaving Zero-sen pilots to revert to hand signals for communication.

IJNAF fighters lacked reliable communication in the Solomons theater well into 1943, thus limiting airborne control. This problem plagued Zero-sen operations from Rabaul, although communications slowly improved with the arrival of the Model 22s and Model 52s.

A6M5 MODEL 52 ARMAMENT

The A6M5 retained the same basic armament of the earlier models of the Zero-sen, with a pair of Type 97 7.7mm machine guns in the nose. Each weapon had ammunition boxes that held 700 rounds per gun. The two Type 2 Model 99 20mm cannon in the wings featured barrels that were longer than those fitted to the earlier Type 99-1 in the A6M2/3, the extension improving the weapons' accuracy. The barrel protruded 18in. from the wing's leading edge. Each cannon was drum-fed, with each drum containing 100 rounds of ammunition.



A6M2 Model 21s and A6M3 Model 22s of the 204th and 582nd Kokutai at Buin airfield, on the island of Bougainville, in May 1943. The pilots could raise their seats to sit high in their cockpits in order to improve forward vision for taxiing and take off. All fighters were fitted with 72-gallon under-fuselage drop tanks, which extended their range to a combat radius of more than 500 miles when land-based. (Author's Collection)

The Zero-sen had phenomenal elevator response, meaning it could out-loop any US fighter, but especially the Corsair. Conversely, it was slower in a dive than the heavy F4U. An experienced Zero-sen pilot would play such considerations to maximum effect in aerial combat. Despite the appearance of a new generation of Allied fighters throughout 1943, the Zero-sen was still considered first-rate by the experienced pilots who flew it. In his detailed memoirs, Lt Mitsugu Kofukuda, Hikotai leader of the 204th Kokutai between July 1942 and March 1943, praises the Zero-sen's excellent qualities and blames his unit's losses more on the lack of experienced pilots rather than the abilities of the latest American fighters.

The approximate one-on-one combat kill ratio during this period can be explained by the reality that pilots from both sides had an advantage; the Corsair had firepower and speed on its side, while the Zero-sen had maneuverability. The winner of any combat engagement in such circumstances was the pilot who could maximize the qualities of the fighter he was flying.

F4U-1A and A6M5 Model 52 Comparison Specifications

	F4U-1A Corsair*	A6M5 Model 52
Powerplant	2,000hp Pratt & Whitney R-2800	1,130hp Nakajima Sakae 21
Dimensions		
Span	40ft 9in.	36ft 1in.
Length	33ft 4in.	29ft 11in.
Height	16ft 1in.	11ft 6in.
Weights		
Empty	8,982lb	4,136lb
Loaded	12,658lb	6,025lb
Performance		
Max speed	388mph at 24,350ft	351mph at 19,685ft
Range	965 miles	1,194 miles
Climb	8.06 minutes to 20,000ft	7 minutes to 19,685ft
Service ceiling	36,200ft	38,520ft
Armament	6 x 0.50-cal Browning M2 machine guns	2 x 7.7mm Type 99 machine guns and 2 x 20mm Type 99-2 cannon

*Specifications from Chance Vought Manual SD-261-1-B, dated April 1, 1943

THE STRATEGIC SITUATION

The Solomon Islands are rugged, interspersed, and mountainous, with impenetrable jungle. The island chain contains hundreds of islands and even more atolls and reefs. The geography is dotted with remote villages and settlements, and during the Pacific campaign the locals were nearly all supportive of the Allies and hostile to the Japanese. These circumstances dictated that more Allied pilots were saved than Japanese ones, many of whom were killed by locals when captured. The essence of this world in which both sides fought is encapsulated by US Navy officer and author James Michener, who wrote of his time there:

> This home of great battles is the most beautiful I know in the world. This may offend those who struggled in its skies. It may cause a shudder to those who fell into its waters and paddled their way on rafts to dismal islands. But during the war I flew The Slot, and so help me, it was beautiful, passionately wonderful with craggy islands, spangled lagoons and towering clouds.

The 1943–44 air war in this theater centered on the primary goal of capturing Rabaul. The origins of this policy could be traced back to July 9, 1942, when the Allied Joint Chiefs of Staff declared that the Japanese fortress at Rabaul would become the focus of the aerial campaign for all Allied forces in the South and Southwest Pacific areas – a policy initiative that was to commence immediately. At the subsequent 1943 Casablanca conference, the policy was modified to advance from New Guinea and Guadalcanal through the central Solomons towards Rabaul. It was noted that the

The volcanoes of Mount Tavurvur (left) and Mount Komvur (right) dominate this view of Rabaul and Simpson Harbor. In this photograph, Lakunai is shrouded in smoke from a recent Allied air attack. (Tony Holmes Collection)

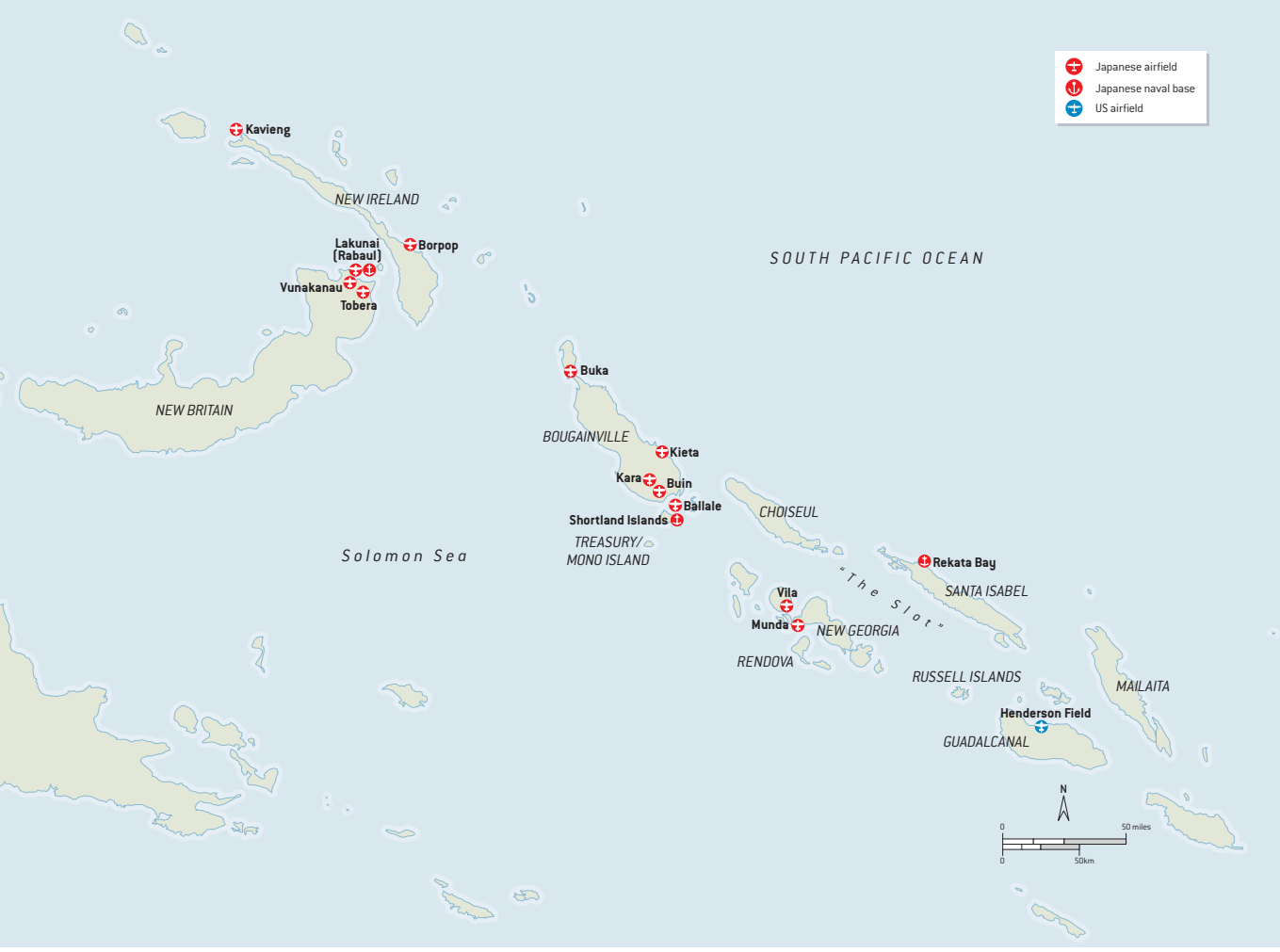
capture of the latter would break the "Bismarck's Barrier" as a major step towards threatening Guam and Truk.

Thirteen days after the abandonment of Guadalcanal by Japanese ground forces on February 7, 1943, American troops seized the Russell Islands. Seabees immediately commenced building Pavuvu and Banika airfields. The following month, Japanese air power focused mostly on the New Guinea theater, leaving Allied air power in the Solomons to consolidate its strength on newly completed airfields.

At the Trident leadership conference held in Washington, D.C. in mid-May 1943, the Rabaul objective was revisited and a major policy change implemented. Due to the predicted loss of life amongst Allied forces, Rabaul would not now be captured. Instead, it was to be isolated and neutralized. Meanwhile, the Japanese airfield at Munda, on the island of New Georgia, about halfway along "The Slot," continued to hold out as a lynchpin for the defense of the central Solomons. Constant bombing of the airfield had placed Japanese forces on the island in a precarious position. For the Allies, the capture of Munda was a critical step on the road to Rabaul, and attacks against New Georgia proceeded with little let-up.

The combination that made the Solomons air campaign a success – Seabees and aviators. Note that the two pilots on the right have clipped noteboards to their legs. (Tony Holmes Collection)

In order to avoid these daytime Allied raids, a localized Japanese command meeting was held at Munda airfield during the late evening of July 3, 1943. It was attended by Lt Cdr Yoji Tanegashima, Commander of No. 1 Transport Unit, Rear Admiral Minoru Ota, Commander of the 8th Combined Special Naval Landing Force, and Maj Gen Noboru Sasaki, Imperial Japanese Army Commander of the Southern Detachment.



The meeting was acrimonious. Sasaki urged the evacuation of his forces to Rendova aboard all available Daihatsu barges. However, Ota replied that only three were serviceable following Allied attacks. After considerable argument, and with no decision reached, the meeting was adjourned. On July 9 Sasaki ordered that barges land at Bairoko Harbor, on the other side of New Georgia, instead.

For the rest of July, barge reinforcement runs to the besieged island from Bougainville became impossible due to clear skies facilitating effective Allied night raids. The situation at Munda became critical during this period. When US Army soldiers encroached upon the airfield on August 5, Sasaki ordered the withdrawal of all Japanese forces from the Munda area to the nearby island of Kolombangara, where there was a Japanese base and airfield at Vila. With Munda removed as a threat, the Allies next landed on Vella Lavella, which was lightly defended. Only Bougainville stood in the way, and on September 17, 1943 the Japanese evacuated Kolombangara.

Despite excessive Fifth Air Force claims of hundreds of aerial victories by the end of November 1943 during the alleged neutralization of Rabaul, this had not been the case. In fact, during the second-biggest Fifth Air Force strike of the offensive on November 2, 1943, the Americans had come off a poor second. The truth is that the ferocity of the IJNAF response took US planners by surprise, as they were unaware that significant carrier reinforcements had arrived at Rabaul the day before the raid.

The main fighter bases used throughout the Solomons in 1943–44 were at Rabaul (Vunakanau, Tobera, and Lakunai), Buka, Buin, and Ballale, with Kavieng used as a staging base for attrition replacements being flown in from other airfields, specifically Truk. Munda was only briefly used (mainly by the 204th and 252nd Kokutai), as was Kara, built later in the conflict. Vila, Kieta, and Borpop served as emergency strips, whilst Rekata Bay and Faisi and Poporang Islands (both in the Shortland Islands) were home to seaplane bases. After many of these areas were recaptured, only Munda was rebuilt as an American airfield.

Admiral Mineichi Koga, commander of the Combined Fleet. (NARA)

These aircraft were flown in as part of Operation *Ro-Go*, authorized on October 28, 1943 by Admiral Mineichi Koga. This commenced when 173 aircraft from the First Carrier Division vessels *Zuikaku*, *Shokaku*, and *Zuiho* were ferried to Rabaul from Truk on November 1 to temporarily boost air power.

The next big step for the Allies in the campaign to neutralize Rabaul was the building of an airfield on Bougainville. On November 1, 1943, Commander Air, Solomon Islands (COMAIRSOL) Fighter Command oversaw a landing in the Torokina area near Empress Augusta Bay, where wide plains near the coast offered an excellent site for the construction of a major airfield complex. Japanese naval retaliation, especially from cruisers called forward from Truk, was stopped by Halsey with two carrier strikes on November 5 and 11. These strikes prepared the way for the final neutralization of Rabaul, which officially commenced on December 17. There was considerable air activity over Rabaul for the next two months until February 20, 1944, when a mass evacuation of all IJNAF air power from the area commenced. The large aerial base had finally been neutralized.

RABAUL'S ZERO-SEN UNITS

From mid-February 1943 until the defeat of Rabaul's air defenses a year later, Zero-sens primarily served with five land-based IJNAF groups in the Solomons – the 201st, 204th, 251st, 253rd, and 582nd Kokutai. They were occasionally joined by land-based carrier detachments assigned to fight alongside them.

Of these units, the 204th Kokutai undertook the longest campaign in-theater, throughout which time it operated an assortment of Model 21, 22, 32 and, finally, 52 Zero-sens. When Corsairs arrived at Guadalcanal in February 1943, the 204th's hikotaicho was Lt Mitsugu Kofukuda. He was replaced by Lt Zenjiro Miyano the following month, and the latter led many of the aerial combats where Zero-sens clashed with Corsairs in the first half of 1943.

Hikocho Capt Ushie Sugimoto instituted regular training missions, despite the pressures exerted on the unit by combat. Following losses incurred on June 26, 1943, the 204th Kokutai was left without officer pilots until the following month, when Lt Cdr Saburo Shindo transferred in from the 582nd Kokutai as the new hikotaicho. Then, in mid-July 1943, the 204th Kokutai amalgamated with the depleted remnants of the 582nd Kokutai. At the end of the following month, Zero-sens from *Junyo* and *Ryuho* that had arrived at Buin in early July also briefly operated alongside the 204th Kokutai.

In October the 204th became a key defender of Rabaul as the USAAF's Fifth Air Force waged a campaign to reduce the effectiveness of the Japanese fortress – a role subsequently assumed by the Cactus Air Force and US Navy carrier forces from November 5 onwards. On January 26, 1944, the 204th Kokutai's remaining 12 A6Ms were withdrawn to Truk and all surplus pilots transferred to the 253rd Kokutai. Accordingly, there were few Zero-sen/Corsair clashes in 1943 where the 204th Kokuta was not present.

By mid-July 1943, the 201st Kokutai was also operating an inventory of 60 Model 21s and 22s in-theater. Its hikotaicho was Lt Kawai Shiro, a veteran and aggressive

Pilots from the newly reinforced 204th Kokutai assembled for a group photograph at Buin in late July 1943. Earlier that month, the unit had assimilated the remnants of the 582nd Kokutai after the latter had been decimated during the heavy fighting associated with Operation *I-Go*. The 582nd's hikotaicho, Lt Cdr Saburo Shindo, had assumed command of the 204th following the merger. (Tony Holmes Collection)

OPPOSITE

Following the defeat of the Japanese on Guadalcanal, US Navy Seabees quickly improved and expanded the number of airfields on the island, then constructed new bases in the Russell Islands, followed by upgrading Munda after its capture. Segi, Ondonga, and Barakoma were later built as new fighter bases, followed by Stirling Island. In the final drive against Rabaul, two major airfields were constructed at Torokina, on Bougainville. All of these sites were used by Corsair units at different stages in the campaign.

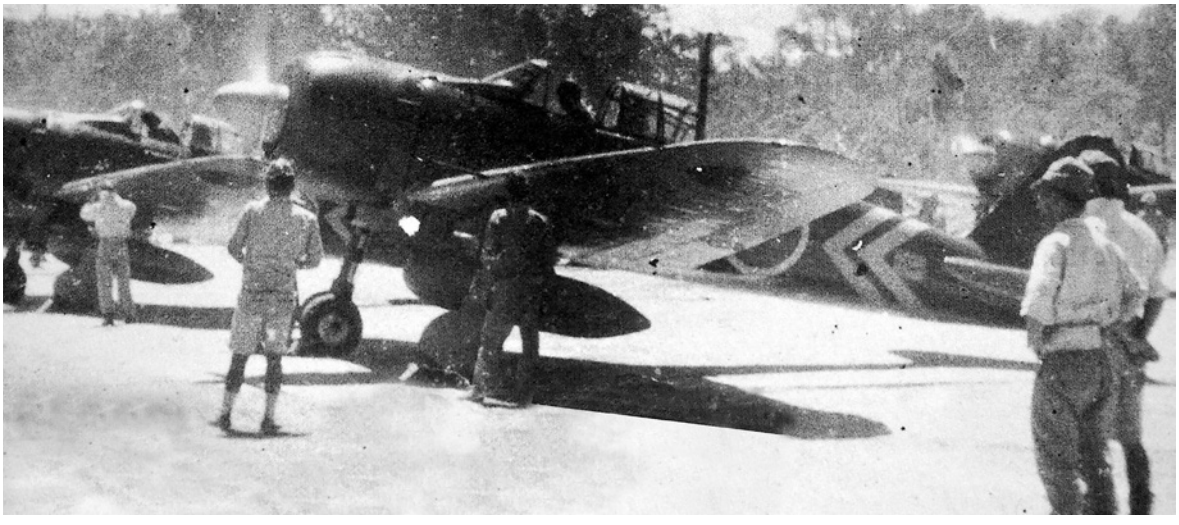
flight leader who had first arrived in New Guinea as early as January 1942. The 201st flew from bases in Bougainville throughout much of 1943, before returning to Rabaul in late October and then withdrawing to Saipan in early January 1944.

By the end of November 1942, after the Tainan Kokutai had fought itself to virtual annihilation, it was sent back to Japan to re-equip with new Zero-sen Model 22s at Toyohashi, where it was reformed as the 251st Kokutai. Capt Yasuna Kozono stayed on as hikocho, so the unit kept its colloquial name of "Kozono Buntai." When reassigned to Rabaul, Lt Ichiro Mukai was appointed hikotaicho, and the unit brought a total fighter complement of 58 Zero-sen Model 22s to the South Pacific. They were supplemented by seven J1N1 "Irving" reconnaissance aircraft and four G4M1 "Betty" transports.

Following a stint at Bougainville's frontline airfields, the 251st Kokutai was withdrawn to Rabaul in early May 1943. From here, it continued to fly A6M operations until it was reclassified as a nightfighter unit on September 1, 1943 and exclusively equipped with J1N1s. The 251st's remaining Zero-sens were distributed among Rabaul's other fighter units. During the brief period (May 10 to August 31) that the 251st had operated Zero-sens, it had lost 34 pilots in combat and many more fighters to both enemy action and operational accidents.

Another unit that regularly engaged Corsairs was the 253rd Kokutai. After operating from Kavieng for the first quarter of 1943, the group was withdrawn to Saipan in order to re-equip when its authorized strength was increased to 96 Zero-sens. Lt(jg) Saburo Saito was appointed hikotaicho, and one chutai under his direct command was briefly despatched to Buin in July to participate in the Rendova campaign. When Saito was lost over the island on July 15, 1943, Lt Toshitaka Ito was

A mottled A6M3 Model 22 assigned to the 251st Kokutai is pushed back into a makeshift hardstand at Buin in mid-1943. Attempts to hide airframes from Allied air attacks at this base met with limited success. (Author's Collection)



His fighter marked with command chevrons mid-fuselage, Lt Cdr Saburo Shindo of the 582nd Kokutai warms up his engine at Buin prior to undertaking a long-range Solomons strike on June 16, 1943. The aluminum-painted spinner and masked-off manufacturing stencil indicate that this particular Model 22 was factory-camouflaged. (Author's Collection)

appointed acting hikotaicho. One week later, the 253rd Kokutai was again returned to Saipan, leaving behind its Zero-sens for allocation to other units in the 26th Air Flotilla.

On August 18 Lt Cdr Harutoshi Okamoto, the previous buntaicho of the 4th Kokutai in early 1942, was posted to the 253rd Kokutai just prior to the unit's return to Rabaul in September 1943 – this time it flew from Tobera. Okamoto remained hikotaicho throughout this challenging time, serving until January 19, 1944. By the end of that month the 253rd Kokutai was the only unit able to credibly defend Rabaul, as the severe attrition rate had worn down all other fighter units, including the recently arrived Zero-sens of the 2nd Carrier Division.

The final group to see considerable action against Corsairs was the 582nd Kokutai, which fought itself to a standstill during the Solomons campaign. Often led by the ever-present and determined hikotaicho Lt Cdr Saburo Shindo, its Zero-sens played a key role in Operation *I-Go* in April 1943. Fighter sweeps and the defense of Bougainville airfield continued throughout May and June, with Lt(jg)s Gi'ichi Noguchi and Usaburo Suzuki leading many missions alongside WO Kazuo Tsunoda as senior NCO. The unit's last combat operation was flown from Buin on July 12, when Suzuki led 12 Zero-sens and aircraft from the 204th and 251st Kokutai as escorts for nine "Vals" on an uneventful bombing attack.

The 582nd had by then almost fought itself to a standstill, and the unit was disbanded on August 1. Lt Cdr Shindo was transferred across to the 204th Kokutai as hikotaicho, after which most of the 582nd Kokutai's Zero-sen pilots were reassigned to Rabaul's other fighter units.

By the end of October 1943, Buin and Ballale had been rendered unsuitable for fighter operations. Both bases were effectively vacated by all aerial units, leaving behind only reduced caretaker garrisons.

The "Rabauru Kokubutai" (Rabaul Air Force) is a colloquial phrase sometimes used to describe the last units flying in defense of Rabaul in late 1943/early 1944, although this is not an official term. Rather, it came to be used to describe Rabaul's collective fighter force.

THE COMBATANTS

US NAVY AND US MARINE CORPS PILOT TRAINING

Even before the commencement of hostilities, the US Navy had simplified its training syllabus to accelerate the needs of its service, with most prospective pilots entering through the pre-war V-5 Naval Reserve program. By early 1943, flight preparatory schools had been established at 17 colleges and universities across the USA.

Twelve months earlier, in an effort to further streamline the training process, the US Navy had almost halved the length of the basic flying course from its original one-year duration. There had also been a seminal shift in transitioning primary and basic training to land-based aircraft from floatplanes, the latter having epitomized the pre-war period. Then, from early 1942, cadets had to specialize in a particular aircraft type once they had passed elementary and basic flight training. Those who opted for single-engined aircraft had to then complete another six months in intermediate and operational training.

In July 1943 the V-5 and V-7 Naval Reserve programs were merged into a new V-12 program, with all V-5 students reclassified as V-12A ("A" representing "Aviation"). Throughout 1943, the US Navy developed four separate training commands – Primary, Intermediate, Operational, and Air Technical Training, and by the end of the year they had been melded into one Naval Air Training Command.

Following the commencement of hostilities, and a major increase in the number of trainees, the US Navy introduced two early programs that aviation cadets would have to complete prior to attending pre-flight school. The Flight Preparatory School

program provided 15 weeks of introductory classes in basic aeronautical knowledge. Upon its completion, the cadet received a further 12 weeks of elementary flight training in the J-3 Cub (designated the NE-1 in US Navy service) through a civilian pilot training program renamed the War Training Service.

Primary flight training conducted at NAS Pensacola saw cadets receive around 80 hours of instruction on basic training aircraft, principally the N3N or N2S Stearman biplanes, both affectionately christened the "yellow peril" due to their bright color schemes. The final stages of primary instruction taught formation and night flying.

Would-be US Navy and US Marine Corps fighter pilots conducted their Primary flight training on either the N2S Stearman or N3N, with an example of the latter seen here at Marine Corps Recruit Depot, South Carolina in late 1942. (NHHC)

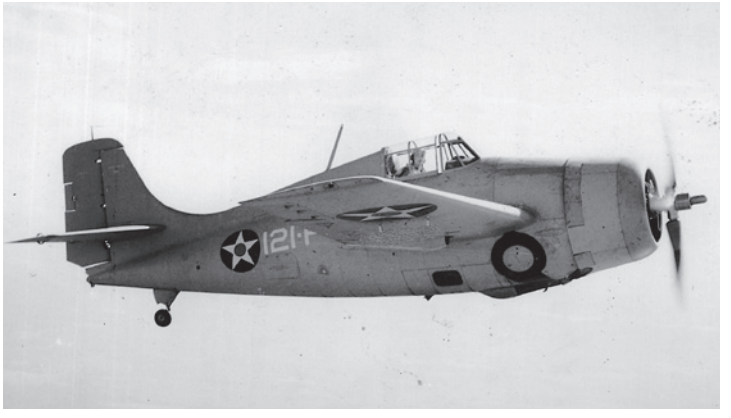
The purpose of the Intermediate training stage was to turn the cadet into a military pilot, with the syllabus incorporating advanced formation and limited combat tactics. Instrument training was done in the Link Trainer. Having flown the SNC-1 or SNV Valiant during the first part of the Intermediate training course, cadets slated for carrier operations then transitioned to the SNJ Texan. With the latter, they made simulated carrier landings on concrete runways specially marked for the occasion, undertook advanced navigation and received tuition in intermediate combat tactics that included gunnery.

On completion of this Intermediate stage, the cadet was awarded his "Wings of Gold" and commissioned either as an ensign in the US Navy or as a second lieutenant in the US Marine Corps. Pilots selected to fly fighters with the US Marine Corps were posted to one of several airfields in Florida for Operational training. Conversion to a fighter type usually saw pilots clocking up the hours in war-weary F4F Wildcats, receiving further instruction in gunnery, night flying, carrier landings, and combat tactics. They also completed several cross-country navigation exercises. Gunnery practice included live ammunition passes at tow-target sleeves using color-coded live ammunition.

With Primary flight training completed, students moved on to the Intermediate training course, where they initially flew SNC-1s and SNV Valiants. This particular SNV-1 was photographed at NAS Corpus Christi, in Texas, in 1941, the aircraft sharing the ramp with two SNJ Texans and a SNB. Students destined for carrier-type aircraft moved on to the SNJ during the latter part of the Intermediate training course. (NARA)

By the time they graduated, each cadet had accumulated around 600 flying hours in total, 200 of which had been flown at the controls of a frontline US Navy aircraft. Pilots who failed were given commissions as regular ensigns.

Once the war had started and the first batch of pilots had completed a combat tour, many were – usually somewhat begrudgingly – assigned as instructors to pass on hard-earned experience. These men were



This F4F-3 Wildcat was assigned to VMF-121, which was formed at Quantico, Virginia, in the summer of 1941. The unit was sent to San Diego, California, with 28 Wildcats on December 16 that same year following the attack on Pearl Harbor. Destined to become the US Marine Corps' top-scoring fighter squadron of all time, it switched to the F4U-1 on Guadalcanal in April 1943. (Tony Holmes Collection)

desperately needed in the flight schools, as following the outbreak of hostilities, Secretary of the Navy Frank Knox expanded the training program to produce 20,000 Naval Aviators annually. This number reflected the acknowledged requirement to train a considerable cadre of aviators to a reasonably high standard to guarantee an adequate supply of replacement pilots for frontline duty.

One South Pacific-based unit to which trained Corsair pilots could be posted was VMF-121, which would end the war at the top-scoring US Marine Corps fighter squadron. Formed at Quantico, Virginia, in the summer of 1941, it had been sent west to San Diego, California, with 28 Wildcats just nine days after the attack on Pearl Harbor. Expecting to be immediately thrown into action in the Pacific, VMF-121 was suddenly stripped of its F4Fs when they were transferred to the US Navy as attrition replacements.

The squadron personnel were then sent to Camp Kearny, near San Diego, where a further three units – VMF-122, VMF-123, and VMF-124, all of which would eventually fly Corsairs in combat – were created from VMF-121. All four squadrons then commenced training on early-model Wildcats and several SNJ Texan trainers. VMF-124 became the first of the quartet to receive F4U-1s at NAS North Island, in San Diego, in October 1942.

The VMF-124 pilots spent the next two months being checked out in the new type, although they were lucky if they accumulated more than 20 hours of flying time on the type due to high demand. The proficiency of the majority of pilots thus depended on them gaining experience with the F4U in combat. Later squadrons had a vastly different experience, as they frequently included pilots transitioning to the Corsair from the Wildcat that had already seen considerable combat during the Guadalcanal campaign of 1942–43. Others had spent time training at Turtle Bay airfield on Espiritu Santo prior to being sent into combat. The average age of a Corsair pilot entering the theater in 1943 was 22, and many had less than 30 hours on the fighter when they engaged the enemy for the first time.

Such were the ongoing pressures on the ground when VMF-124 first arrived at Guadalcanal on February 12, 1943 that its pilots were given the most cursory of briefings. They were rushed into the Fighter Command dugout and shown a map of the Solomons, upon which an Intelligence Officer pointed out the locations of coastwatchers. Then they were off on their first patrol, escorting a PBY flying boat.

IJNAF PILOT TRAINING

By the end of 1942, Rabaul's veteran Zero-sen pilots had been badly worn down by the Guadalcanal campaign, although there was still considerable experience amongst

F4U-1 CORSAIR COCKPIT

1. Armored glass
2. Mk 8 reflector gunsight
3. Gun switch panel
4. Instrument shroud coaming
5. Water injection quantity warning light
6. Stall warning light
7. Carburetor air temperature warning light
8. Engine rev counter
9. Auxiliary drop tank fuel control switch
10. Altimeter
11. Manifold pressure gauge
12. Directional gyro
13. Airspeed indicator
14. Compass
15. Turn and bank indicator
16. Artificial horizon
17. Rate of climb/descent indicator
18. Elapsed time clock
19. Cylinder temperature indicator
20. Oil temperature indicator
21. Oil pressure gauge
22. Fuel pressure gauge
23. Instrument panel lights
24. Flap control/indicator
25. Ignition switch
26. Alternate air control
27. Throttle lever
28. Supercharger control
29. Landing gear and dive brake control lever
30. Gun charging control
31. Mixture control lever
32. Propeller control lever
33. Aileron trimming tab control wheel/indicator
34. Fuel tank selector
35. Hydraulic hand pump
36. Elevator trimming tab control wheel
37. Elevator trimming tab indicator
38. Rudder trimming tab control wheel/indicator
39. Tailwheel locking handle
40. Rudder peddles
41. Control grip with gun-firing button
42. Control column
43. Cockpit ventilator
44. Signal pistol cartridge container
45. Rocket station distributor box
46. Main tank fuel contents gauge
47. Hydraulic pressure gauge
48. Voltmeter
49. Fuel tank pressure gauge
50. Accelerometer
51. Radio control box
52. Cooling flap control levers
53. Pilot's distribution box
54. Map case
55. Pilot's seat
56. Pilot's seat adjustment lever

Combined Fleet Chief of Staff Vice Admiral Matome Ugaki was greatly concerned by ever-increasing rates of attrition within frontline units during 1943, and he tried to ameliorate this by reducing the length of the training syllabi so that more replacement pilots would be available. Although numbers did increase, the quality of the new naval aviators left a lot to be desired. (NARA)

their ranks. However, some IJNAF units such as the Tainan Kokutai had all but been wiped out. Its 11 surviving pilots were returned to Japan in November 1942 to recuperate and form the core of a new unit. Attrition replacements bound for units that remained in-theater were sent to Rabaul from Japan via Truk, either aboard a ship or a flying boat.

The six-month-long Guadalcanal campaign (August 7, 1942 to February 9, 1943) had badly affected the *esprit de corps* that had initially pervaded IJNAF land-based aviation units at the start of the Pacific War. Numerous aerial battles had cost the 11th Air Fleet much of its skilled fighter cadre, and by the time the Corsair arrived in-theater in February 1943, flagging morale had become a characteristic and serious consideration for the remaining IJNAF pilots, exacerbated in many cases by poor health.

Meanwhile, in order to meet the growing demand for replacement aviators, the methodology of IJNAF training changed in Japan in 1943 when just 2,700 pilots graduated. Although Combined Fleet Chief of Staff Vice Admiral Matome Ugaki was acutely aware of the ever-increasing number of pilots being lost, he concerned himself more with an ongoing decline in training standards in Japan. To meet the need to increase the flow of replacement aircrew to the South Pacific, the duration of the training syllabi for both commissioned and enlisted pilots in Japan was reduced by two months in mid-1943.

Ominously, cutbacks involved the core subjects of tactics and gunnery. Like Ugaki, American flyers had noticed a commensurate decline in the aggressiveness of IJNAF fighter pilots. An example of this was recorded in an after-action report by Lt Cdr S. E. Burrows, Commander Air Group embarked in USS *Saratoga* (CV-3) in early 1943:

> We ran into Jap[anese] in some raids and they refused combat; that is, they would not attack us. In every case where we had superior numbers in our group, they just refused combat and would fly off. The Jap[anese] today hasn't anything like the guts of their pilots during the early part of the war. I think they've lost a great many of their best pilots, and their people flying the planes today haven't got anything like the same stuff.

FPO1c Masao Kato of the 204th Kokutai who was captured when his Zero-sen was shot down off New Georgia in March 1943 explained to his interrogators what training he and other replacement pilots had received upon reaching Rabaul earlier that year. Kato had applied for pilot training in 1939 during his second year of naval service, and he was one of only 25 applicants selected for the course. To qualify for entry, he first passed an exhaustive suite of academic exams before being assessed for flying aptitude, including instruction in a Link Trainer.

After enrolling, Kato was sent to Kasumigaura, a key naval base on the southern coast of Honshu, where he commenced ground instruction. He then became one of a group of 160 students assigned to 20 instructors, completing five hours of dual instruction in a Type 96 biplane prior to going solo. This was followed by a further

75 hours dual and 75 hours solo, including navigation exercises. Kato then logged 130 hours of flying time in an A5M4 fighter, before finally converting onto the Zero-sen. More training ensued in the A6M at Kure, where he participated in aerial gunnery practice for 30 minutes each day, firing at a towed target. Kato then returned to Kasumigaura, where he remained until reassignment at the end of November 1942.

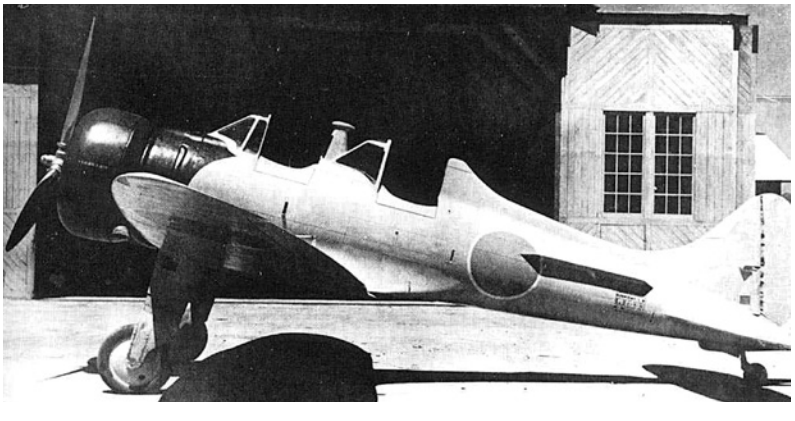
Delivered to Rabaul in a Combined Fleet H6K4 "Mavis" flying boat, Kato's total flying time when he arrived was an impressive 600 hours. He had completed an additional 100 hours of combat flying in four months by the time he was shot down.

Poor health and disease were not the exclusive domain of either side, but the Japanese suffered more. The health of the entire Rabaul garrison had steadily declined since the Japanese occupation in January 1942, with the most familiar and debilitating disease being Vivax malaria. The majority of Zero-sen pilots suffered at least one bout of this recurring illness during their stay, and on any given day throughout 1943 one IJNAF pilot in five was incapacitated by it. During his interrogation, Masao Kato relayed a sobering description of two of his comrades who, hospitalized for malaria, had committed suicide in their debilitated state when told they would not be able to fly again for a long time.

Other chronic diseases permeating Rabaul and the Bougainville bases included dengue fever, tuberculosis, respiratory disorders and kidney infections. Poor health exacerbated the high physical demands already endured by fighter pilots in combat, with the long-ranging Solomons missions and the commute down to the Bougainville bases pushing them to the limit. Maintaining formation safely over such distances required hours of tedious concentration, with the price of inattentiveness sometimes being death.

Nonetheless, the IJN hospital at Rabaul boasted some of the best facilities outside Japan. Located in an imposing colonial-style wooden plantation building not far from Keravia village, and capped with a Christian spire, it was sometimes referred to affectionately as "the church." A cadre of crisply-dressed female nurses staffed the premises, and they began each day with calisthenics in front of the hospital overlooking Blanche Bay. This activity was closely observed by a cockatoo in a cage, who became the hospital mascot. Wounded pilots who made it back to Rabaul were assured of the best medical attention, and evacuation to Japan if required.

There was only basic aircrew accommodation at Rabaul. Officers with the rank of substantive lieutenant and above were housed two or three to a room in wooden barracks not far from the relevant airfield. Junior grade officers and ensigns were accommodated in roomy tents, while other ranks slept in crowded tents which regularly quartered eight or more flyers. On frontline airfields, however, all pilots shared more sparse conditions centered around basic tent accommodation.



Many future Zero-sen pilots logged hours in the A5M fighter, hundreds of which were relegated to training tasks once the A6M entered service. The 21st Naval Arsenal at Ohmura Arsenal also produced 103 two-seat A5M4-Ks in 1940–41, these aircraft being powered by the same 710hp Nakajima Kotobuki 41 radial engine used by the single-seat fighter variant. Note also the horizontal fin on the fuselage, which was introduced to improve the aircraft's stability and thus make it more pilot-friendly. (Tony Holmes Collection)

Compounding side-effects of limited sleep, fatigue, and poor health meant that pilots would sometimes fall asleep during long-distance missions. The result was always the same – the Zero-sen would be seen to climb slightly then fall off into a dive. Usually pilots came to before impacting the ground or sea, although in a few cases they did not.

Every Japanese aviator knew that their American counterparts were allocated regular leave. This resentment came to the surface during several interrogations of captured Zero-sen pilots, one of whom told his captors that "leaving a pilot in combat for a year-and-a-half or more without leave was no way to run a war." With no leave available to IJNAF pilots, the relentless strain of facing death without any possibility of respite became an appalling burden. Under such circumstances it is hardly surprising that both sides harbored a small percentage of pilots who refused to fly combat or no longer wished to. Some pilots were threatened with a court-martial for refusing to fly, although in most cases aviators clearly unable to function due to stress were quietly flown back to Japan.

The wooden briefing shack at Lakunai airfield was regarded as "fighter central" by Rabaul's pilot cadre due to its pedigree and centrality. Built from lumber sourced nearby, its wide veranda permitted expansive views of airfield activity and the Tavurvur volcano – the active smoky mountain in the distance across the blue-brown waters of the bay.

Sizeable aerial navigation charts on a nearby table could be flipped for selection and consultation. Local tribal artefacts adorned the premises, including a large wooden warrior of about half-human height positioned at the foot of the stairs. Bartered from the Siwai tribe near Buin and air-freighted to Rabaul on board a G4M "Betty" bomber, it became a *de facto* mascot. Inside, a large circular wind-up Seiko clock with a cream face was fastened to the wall behind the assignments blackboard, set to Tokyo time. Parades were often conducted directly in front of this shack, and superiors routinely used the veranda as a platform from which to give briefings, pep talks, and post-mission wrap-ups.

IJN sailors and officers visit the victory monument at Rabaul. It commemorated the Japanese servicemen lost during the invasion of New Britain in late January 1942. The monument was not far from the main wharf, and in the background can be seen part of Chinatown. (Author's Collection)

In many ways Rabaul proved a relatively agreeable environment for fighter pilots. It hosted a fleet of vehicles captured locally from the Australians, or at Singapore from the British. These were used to transport crews to their fighters, or if one was free, officers could borrow a sedan to drive to town for errands or sight-seeing. Mail from home was reasonably frequent, brought in by regular Tokyo–Truk–Rabaul air services operated by flying boats of Combined Fleet Headquarters. "Consolation performances," the equivalent of American USO shows, also featured in Rabaul life, and such entertainment was always well-attended.

A6M2 MODEL 21 COCKPIT

1. Type 98 Reflector Gunsight
2. Artificial horizon
3. Turn-and-bank indicator
4. Compass
5. Type 97 7.7mm machine guns
6. Rate-of-climb indicator
7. Fuel pressure gauge
8. Tachometer
9. Cylinder temperature gauge
10. Oil temperature gauge
11. Intake manifold pressure gauge
12. Oil cooler shutter control handle
13. Ignition plug charger switch
14. Rudder/brake pedals
15. Oxygen control
16. Oxygen pressure gauge
17. Oxygen quantity gauge
18. Control column
19. Wing fuel tanks quantity gauge
20. Fuselage fuel tank quantity gauge
21. Switchboard
22. Fuel injection pump
23. Engine main switch
24. Radio direction indicator
25. Altimeter
26. Exhaust temperature gauge
27. Clock
28. Airspeed indicator
29. Interior lights
30. Radio homing control unit
31. Type 3 Mk 1 Radio control panel
32. Arrestor hook extension/ retraction handle
33. Arrestor hook/flaps down angle indicator
34. Radio homing equipment control lever
35. Cowl gills control handle
36. Cockpit ventilation air intake
37. Seat adjustment lever
38. Seat
39. Elevator trim tab control handle
40. Machine gun safety lever
41. Throttle lever
42. Machine gun selector switch
43. Propeller pitch adjustment lever
44. Mixture control lever
45. Drop tank release lever
46. Bomb release levers
47. Switchboard
48. Flap control
49. Landing gear lever
50. Drop tank selector gauge
51. Fuselage/wing tanks switching cock
52. Wing fuel tanks selector lever
53. Emergency gear down lever
54. High-altitude automatic fuel mixture control

IJNAF support personnel play baseball outside the radio communications center at Vunakanau while pilots are away on a mission. Aside from aerial traffic, personnel in this building took calls from remote field stations and decoded messages from Tokyo. Later in the war, the center was the focal point for radar reception from the numerous sets erected in the hills behind the airfield. (Author's Collection)

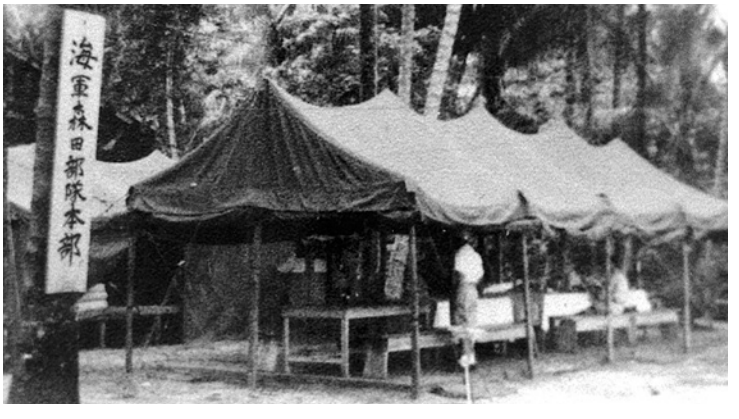
Japanese culture was big on ceremony, and any significant occasion was duly marked. Whether it be the opening of a new road, new facilities for an airfield or creation of a new government authority, sake, uniforms, and speeches were in no short supply. Numerous shrines for the war dead could be found on Rabaul's streets and in nearby botanical gardens, with a special one for downed fighter pilots adjoining Lakunai airfield's operations shack. A victory monument to celebrate the occupation of Rabaul had been built near the wharf area, attended by another proximate shrine to commemorate those lost during the invasion.

Hot tubs were set up on the eastern end of Lakunai, where there was a regular supply of thermal spring water. Recreational sports included traditional Japanese pursuits such as archery, and even regular games of baseball were played on a wide dirt field near Vunakanau's communications center. Relations with the local Tolai clans were cordial, and curious pilots often conducted day trips into more remote areas to visit villages. Most early mornings, Vice Admiral Jinichi Kusaka could be seen taking his regular horse-ride, or strolling through the botanic gardens with Lt Cdr Yasumi Doi, Staff Officer to the Southeast Fleet, who shared his equestrian passion.

Offering a more temperate climate due to being situated on a plateau to the west of Rabaul, Vunakanau airfield (termed "Rabaul West") was a well-developed and sprawling base with revetments, generators, gardens, and maintenance facilities – much of it built with the cooperative assistance of Tolai locals. Although the airfield's main runway was concrete, rainy periods could turn the taxiways into a quagmire. Nearby Lakunai, termed "Rabaul East," permitted takeoffs in both directions over the sea.

In early 1943, Kavieng, northwest of Rabaul, was home to the 21st Air Flotilla commanded by Rear Admiral Toshinosuke Ichimaru. For much of 1943, the Zero-sens of the 253rd Kokutai were based here alongside "Betty" bombers of the 751st Kokutai. Kavieng had also become an expansive and relatively pleasant base by 1943.

The 204th Kokutai's HQ tent at Buin in 1943. The sign nailed to the coconut tree in the foreground reads "Headquarters of the Morita Unit". (Tony Holmes Collection)



IJNAF groundcrew and flight personnel in the area totaled around 4,000. "Bettys" would regularly collect fresh fruit and produce and deliver them to Kahili, Buin, Buka, and Rabaul, where Rear Admiral Sakamaki Munetaka, commander of the 26th Air Flotilla from September 1943, ensured that priority distribution was given to aircrew. Refreshments were rationed out to pilots on a weekly basis at the rate of five half-pints of sake or three quarts of beer.

Zero-sen pilots listen to a pre-mission briefing at Buin. Note the lanyards used to retain their Nambu pistols, and the camouflage webbing on the roof of the tent in the background. (Author's Collection)

In stark contrast to life at Rabaul, the frontline airfields on Bougainville – 450 miles southeast of New Britain – offered minimal facilities. For much of 1943, Rear Admiral Kanae Kozaka's 26th Air Flotilla headquartered at Buin hosted Zero-sens initially from the 204th and 582nd Kokutai. Other units also had contingents distributed piecemeal around various airfields, and detachments from Rabaul-based units made regular appearances at such frontline bases. Although both Buin and Buka had adequate coral/gravel runways, they had been cut from jungle and possessed only basic facilities. Buka was defended by the Sasebo No. 6 Special Naval Landing Force, while Buin was guarded by a detachment from the same unit and personnel from No. 1 Base Unit HQ.

Work commenced in September 1943 on an additional airfield about ten miles west-northwest of Buin. Named Kara after the nearby village, blast shelters were completed and four large anti-aircraft guns sited in its defense, but the Japanese stopped using this field shortly after the November 1943 occupation of Torokina, which cut off their supplies. Both Kara and Munda were particularly harsh environments, with almost no facilities. Of the two, Munda was deemed to be the worst airfield by IJNAF personnel due to its limited space and harsh operational environment. As the war progressed, regular bombings made it the most dangerous base from which to operate.

In terms of morale, Combined Fleet did little to reward or recognize the valor of its aviators, or others in its command. Vice Admiral Kusaka was one of the few commanders to seize the initiative in early 1943 when he instigated the practice of presenting ceremonial swords to exceptional pilots. However, such events were rare. By the end of 1943, pilots at Rabaul's airfields not assigned to the day's flight rosters spent much of their time close to or inside massive concrete bunkers, sheltering from persistent Allied air raids. This was not the life they had expected when they left Japan's shores.

KENNETH A. WALSH

Kenneth Ambrose Walsh was born on November 24, 1916 in Brooklyn, New York, and he enlisted in the US Marine Corps in 1933. Initially serving as an aircraft mechanic and radioman, he was accepted for flight training in 1935 and posted to a series of scout and observation squadrons following his designation as a Naval Aviation Pilot. Walsh saw sea time on board the carriers USS *Yorktown* (CV-5), USS *Wasp* (CV-7), and USS *Ranger* (CV-4) up until he transferred to fighters (F4F-3 Wildcats) in mid-1941 following the formation of VMF-121. He joined VMF-124 in September of the following year and was commissioned as a second lieutenant shortly thereafter.

Walsh made his first flight in a Corsair on October 26, 1942 at NAS North Island, and he sailed aboard the troopship USS *Lurline* from San Diego on January 8, 1943 with 27 other pilots, arriving at Noumea two weeks later. On January 27 the pilots were flown to Espiritu Santo aboard a South Pacific Air Transport Command R4D Skytrain. On February 12 Walsh was amongst the initial batch of 17 pilots to fly Corsairs to Guadalcanal, where they landed at Fighter 2 airfield. A few hours after landing, several Corsairs, including one flown by Walsh, were assigned to escort a PBY Catalina sent to collect two F4F pilots at Sandfly Bay off Vella Lavella.

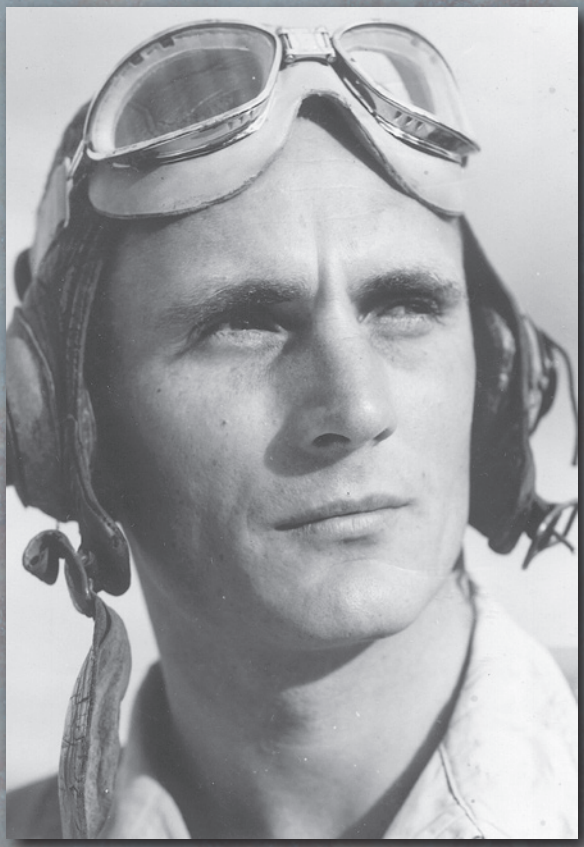
Walsh subsequently participated in the next two missions on February 13 and 14, although he did not engage in combat. This soon changed, and by May 13 he had become the first Corsair ace.

Completing three combat tours with VMF-124 during 1943, Walsh claimed 20 aerial victories (including 16 "Zekes"), two probables, and one damaged. He was himself forced to crash-land after his fighter was shot up by an A6M on August 12. Only three days later, Walsh was flying a Combat Air Patrol (CAP) over the invasion beach at Vella Lavella when a Zero-sen hit the starboard wing tank of his fighter. He made it home safely with another badly damaged Corsair.

On August 30, Walsh claimed four "Zekes" during a large-scale dogfight while protecting Liberators on a strike to Kahili. He was then forced to ditch off Vella Lavella due to combat damage – this was his third ditching in six months. Rescued by a Higgins boat (landing craft) and transported to Vella Lavella, Walsh was brought back to Guadalcanal the next day on board a tank landing ship (LST).

With his seven months in the Solomons now over, Walsh returned to the USA in September 1943. In February of the following year he was awarded the Congressional Medal of Honor by President Franklin D. Roosevelt for his exploits on August 30, 1943. After spending time as an instructor, now Capt Walsh went into action again with F4U-4-equipped VMF-222 in April 1945, flying fighter-bomber missions over Samar and Okinawa and claiming a solitary "Zeke" for his 21st, and final, victory on June 22.

Walsh later flew transport aircraft during the first year of the Korean conflict, and eventually retired from the US Marine Corps with the rank of lieutenant colonel on February 1, 1962. During retirement Walsh was a recurrent participant in history seminars, and he often assisted historians researching the Pacific War. He passed away on July 30, 1998.



1Lt Ken Walsh. (Tony Holmes Collection)

ZENJIRO MIYANO

Born in Osaka in 1917, Zenjiro Miyano graduated from the Naval Academy with the 65th Class in 1938. He subsequently completed the 32nd Aviation Student Course and was then attached to the 12th Kokutai in 1939. Although he was involved in early Zero-sen operations over China from September 1940, Miyano had no opportunity to engage enemy aircraft. In October 1941 he was promoted to the rank of lieutenant and became a chutaicho in the 3rd Kokutai.

Miyano's unit participated with the Tainan Kokutai in the initial long-range attack on Luzon from Formosa on December 8, 1941. He then continued service with the 3rd Kokutai over the Philippines and the Netherlands East Indies. Miyano was transferred to the 6th Kokutai in April 1942, and he embarked with the unit on board *Junyo* for the diversionary attack on Dutch Harbour, in the Aleutians, in June of that year.

In August, after the surprise US invasion of Guadalcanal, the 6th Kokutai was ordered at short notice to Rabaul from Kisarazu, in Japan, to bolster IJNAF forces in-theater. Hikocho Lt Cdr Chisato Morita decided to only include experienced pilots in a select advance detachment sent to Rabaul. Miyano was tasked with leading out the rest of the unit, which arrived at Rabaul with a mixed force of 27 Model 21s and 32s. On October 16, Miyano redeployed to the Buin frontline, where, as part of the IJNAF restructure of November 1, 1942, the 6th Kokutai was redesignated as the 204th Kokutai, retaining the same leadership cadre.

Throughout the first three months of 1943 Miyano led many Zero-sen missions, covering Guadalcanal destroyer convoy runs, defending Buin and Ballale and leading fighter sweeps. Following a leadership shake-up in March, Miyano became hikotaicho of the 204th Kokutai. He was subsequently responsible for planning much of the fighter defense for Operation *I-Go*, personally leading the 204th's Zero-sen contingents against Guadalcanal and Port Moresby on April 7 and 12. Miyano also selected the six 204th Kokutai pilots that escorted Admiral Isoroku Yamamoto on the fateful mission that cost him his life on April 18.

Miyano introduced new operational ideas into the 204th Kokutai, including experimenting with 30kg bombs dropped from the Zero-sen during both aerial and land attacks. He was also the first IJNAF commander to abandon the traditional vic of three in favor of a four-fighter shotai – a formation tactic used by the 204th Kokutai for the remainder of its time in the Pacific. He also worked on ways to provide D3A "Val" dive-bombers with fighter escort as they came out of their attack runs when "low and slow" and at their most vulnerable.

Miyano tried to put his methods into practice on June 16, 1943 when he led a substantive fighter sweep against Guadalcanal, second only in size to the *I-Go Sakusen* mission of April 7, 1943. Miyano led 24 Zero-sens from the 204th Kokutai alongside 30 A6Ms from the 251st Kokutai. The IJNAF fighter pilots were already tired, having flown 300 miles to Buin from Rabaul very early that morning. During 45 minutes of close combat, and while defending 24 "Vals" from the 582nd Kokutai that were targeting a convoy off Lunga, the Zero-sens were badly mauled by Allied fighters.

Corsairs from both VMF-121 and VMF-124 were involved in the action, and Allied victory claims following the clash totaled a farfetched 79 aircraft destroyed in aerial combat and a further 28 downed by defensive fired from the convoy. In reality, the IJNAF lost a total of 27 aircraft, including the Zero-sen flown by 26-year-old Lt Zenjiro Miyano. Following his death, he was given a posthumous promotion to the rank of commander. Miyano was also mentioned in an all-units bulletin, which noted that he had been personally credited with 16 aerial victories, and that the 204th Kokutai had increased its tally to 226 kills under his leadership.

Lt Zenjiro Miyano. (Author's Collection)

COMBAT

Maj William Gise, CO of VMF-124, was photographed outside his tent at Fighter 2 on Guadalcanal. Gise was flying one of four "birdcage" F4U-1s that were lost in combat on May 13, 1943, his squadron engaging 42 Zero-sens from the 204th and 582nd Kokutai, led by Lt Zenjiro Miyano and Lt(jg) Gi'ichi Noguchi, respectively. (Author's Collection)

The best way to analyze the Corsair versus Zero-sen struggle in the Solomons is to examine large-scale combats whereby the two belligerents were pitted against each other almost exclusively. Fortunately, numerous such examples are available for comparison.

As previously noted, on October 26, 1942, VMF-124 became the first US Marine Corps unit to receive Corsairs when it was still under training in California. Three months later, on January 24, aircraft transporter USS *Kitty Hawk* (APV-1) unloaded the first eight "birdcage" F4U-1s at Espiritu Santo. Here, VMF-124 CO Maj William Gise and his pilots were reunited with their mounts. With the unit's engineers having sailed directly onwards for Guadalcanal, the pilots had to prepare their Corsairs for flight themselves. This included removing thick, sticky Cosmoline inhibitor which had protected the airframes during the sea voyage, and then conducting extensive test flights, including at high altitude.

On the afternoon of February 12, the first F4U-1s to arrive at Guadalcanal flew into Fighter 2 airfield. The initial batch of 17 Corsairs were followed by seven more later that day. Just a few hours after landing, two Corsairs from this second group provided an escort for a PBY sent to rescue downed US Marine Corps Wildcat pilots Lt Jefferson DeBlanc and SSgt James Feliton. With the first Corsair combat patrol completed, the following day 11 aircraft from VMF-124 escorted nine US Navy PB4Y-1 Liberators tasked with bombing Japanese shipping off southern Bougainville in the Buin–Shortland area. A handful of Zero-sens in the Buin airfield circuit looked them over from a distance but did not approach.

The February 14 mission was essentially a repeat of the previous day's operation, although this time it marked the first Corsair-versus-Zero-sen combat. The F4Us were again escorting PB4Y Liberators on a shipping strike off southern Bougainville. The mission duly became known as the "Saint Valentine's Day Massacre" due to the high number of American aircraft that were lost.

This photograph was released for publicity purposes in the USA in mid-February 1943 to showcase the arrival of the first Corsairs at Guadalcanal. These aircraft are from VMF-124, and they have their squadron numbers stenciled in black on the fuselage and forward cowl. These were later repainted in white to increase visibility. The closest F4U-1, appropriately marked with the number "1," was the mount of squadron CO, Maj William Gise. (Author's Collection)

A 252nd Kokutai Zero-sen patrol led by FPO2c Tamotsu Okabayashi that was already airborne over southern Bougainville was the first to spot the incoming American formation, and soon additional A6Ms were scrambling from Ballale airfield. The approaching American pilots watched the dust rise from Buin airfield as 13 more Zero-sens from the 204th Kokutai scrambled, with Lt Zenjiro Miyano leading the fighters aloft. Finally, 11 A6M2-N "Rufe" floatplane fighters from the 802nd Kokutai were also scrambled from their Shortland Islands base, thus bringing the strength of the IJNAF force to 41.

A furious dogfight developed around noon after the Liberators dropped their bombs and withdrew southeast with their escorts. A PB4Y and three P-38 Lightnings were lost in the resultant melee, as were two Corsairs flown by 1Lts Gordon Lyon Jr and Harold Stewart of VMF-124. When Stewart re-joined his element leader, 1Lt Lloyd Pearson, after combat at about 20,000ft, gasoline vapor was spraying from several bullet holes in Stewart's wing. The streaming fuel ran the Corsair dry about ten minutes later, whereupon Stewart nosed down to ditch. Following Zero-sens were quick to spot the downed fighter, and they descended to strafe Stewart in his yellow dinghy minutes after the clean ditching. He was never seen again.

From this seminal engagement it is difficult to match belligerents as both Zero-sen units claimed Corsairs. In turn, VMF-124 was credited with three Zero-sens and a "Pete" floatplane shot down, while the PB4Y gunners claimed nine A6Ms and Lightning pilot Capt Bill Griffith one Zero-sen. However, against 14 American claims, the only IJNAF loss was 252nd Kokutai pilot FPO2c Yoshio Yoshida, who collided with Lyon's Corsair during the dogfight. The remaining Zero-sen pilots from the 252nd Kokutai fired a combined total of 5,126 7.7mm and 1,369 20mm rounds, thus reflecting the intense nature of the combat. Although generous shipping claims were made by the Liberator crews, only the 6,500-ton merchantman *Hitachi Maru* was sunk.

This first Corsair-versus-Zero-sen combat had seen the Americans fare badly, with the loss of nine US aircraft showcasing the effectiveness of Japanese fighter tactics and underlining the potency of both the Zero-sen and the "Rufe" floatplane fighter. American losses were of sufficient magnitude that further daylight bombing missions against Bougainville were paused until fighter escort tactics could be reassessed.

Admiral Isoroku Yamamoto, Commander in Chief of the Combined Fleet, watches a recently camouflaged Zero-sen depart from Lakunai as part of the Operation *I-Go* strike force against Port Moresby on April 12, 1943. The 204th, 251st, 253rd, and 582nd Kokutai all participated in the *I-Go* sweeps of Guadalcanal, operating alongside aircraft from the carriers *Hiyo*, *Junyo*, and *Zuikaku*. (Tony Holmes Collection)

A post-mortem of the mission concluded that ideally five fighters should cover each bomber, although at this stage of the war such a generous ratio was unavailable to the Cactus Air Force (the name by which Allied air power on Guadalcanal was known from August 1942). Instead, long-range missions to Bougainville with fighter escort were briefly put on hold. This in turn meant that March and April saw only sporadic aerial combat for Corsair pilots, who had limited involvement in opposing the IJNAF's Operation *I-Go* strike on Guadalcanal on April 7.

By mid-May, VMF-124 had been joined in-theater by VMF-112, which had replaced its F4F-4s with F4U-1s whilst remaining in the frontline on Guadalcanal. The 13th of that month proved to be an auspicious day for two Corsair pilots when, during the first dogfight to defend the Russell Islands, VMF-112's Capt Archie Donahue was awarded four confirmed Zero-sen victories and one probable in the unit's first aerial combat with the Corsair. 2Lt Ken Walsh of VMF-124 was credited with three more "Zekes," which he added to two previous A6M kills and a "Val" destroyed on April 1 to become the first F4U ace.

The many US participants in the action off the Russell Islands on May 13 claimed 18 aerial victories in total – seven to VMF-112, eight to VMF-124, and three to USAAF Lightning pilots. A total of 42 Zero-sens from the 204th and 582nd Kokutai engaged US fighters that day in a battle that raged from medium to high altitude. Both units were led by particularly experienced and aggressive leaders in the form of Lt Zenjiro Miyano and Lt(jg) Gi'ichi Noguchi.

Miyano's 204th Kokutai pilots had departed Rabaul at 0700 hrs to refuel and stage through Buin, where they joined their counterparts from the 582nd. Mid-morning, Guadalcanal's radar operators had warned that a single "bogey" had been detected approaching "The Slot" towards the Russell Islands, followed closely by two fighter formations. The single intruder was a 702nd Kokutai "Betty" flown by FCPO Koji Maeda, who had been tasked with reconnoitring the new airfields at Banika and Yandina. However, he turned for home when he spotted American fighters ahead. Among the latter were seven F4U-1s from VMF-112.

The Zero-sen pilots were experienced, and they used all their skills in a series of aerial maneuvers that resulted in them downing six American fighters in exchange for three A6Ms destroyed – a far cry from the 18 credited to US pilots. For VMF-112 in particular, the unit's combat debut with the F4U resulted in a series of "misadventures." 2Lt Otto Seifert's fighter was last seen diving steeply trailing white smoke five miles northwest of the Russell Islands, and no trace of the aircraft, or its pilot, has ever been found. A 20mm shell exploded in Capt Blaine Baesler's cockpit, shattering both his goggles and hydraulic lines in the floor. Nonetheless, a squinting Baesler successfully force-landed on the Russell Islands.

Another Zero-sen holed the starboard stabilizer of Capt Archie Donahue's F4U-1 with two 20mm rounds, while 2Lt Julian Wilcox had half his starboard aileron and

lower rudder mount shot away. This rendered the rudder inoperative and left the pilot with minimal pitch control. Other rounds wrecked the accessories junction and outboard starboard gun. Despite also suffering a painful shrapnel wound to his right shoulder, Wilcox managed to land safely in his badly damaged fighter.

VMF-124 also suffered losses. 2Lt William Cannon could not lower his undercarriage after his fighter's hydraulics were shot up, so he ditched offshore Tulagi and was quickly rescued. 2Lt Benjamin Dale was wounded in the foot by shrapnel, and he too was plucked from the water after he bailed out. The unit's gravest misfortune was the loss of its CO, Maj William Gise, who was posted Missing in Action. Lightning pilot 1Lt James Gill also failed to return.

VMF-124's 1Lt Howard Finn first flew "18" when it arrived in-theater in February 1943, although the fighter is seen here following its transfer to VMF-213 two months later. The Corsair, christened *BUBBLES* by its new pilot, was photographed leading four other "birdcage" F4U-1s on a mission to Munda in mid-1943. (Author's Collection)

Both sides over-claimed on May 13, the IJNAF excessively so. The 582nd Kokutai was credited with nine definites (mostly F4Us, with a handful of USAAF fighters) and the 204th Kokutai about the same. Ordnance expenditure was also high, with 4,250 7.7mm rounds being fired by the 582nd Kokutai and 4,386 rounds by the 204th Kokutai.

Three Zero-sen pilots were lost – FPO2c Shogo Sasaki of the 582nd Kokutai and FCPO Hayato Nozue and FPO2c Yuhi Kariya of the 204th Kokutai. Separately, a 582nd Kokutai Zero-sen force-landed and five more were slightly damaged. The paucity of actual losses suffered by the IJNAF makes it difficult to properly apportion three confirmed US victories between 18 claims, especially with the status of two aces riding on the outcome.

Back at Guadalcanal, the day's combat was remembered by many, not for the excitement, but more for when two P-40Fs were mistakenly shot up by over-enthusiastic VMF-112 Corsairs. After landing, the incensed USAAF victims raced over to VMF-112's camp to confront the suspects. Predictably, when no-one confessed, a robust argument ensued. The story went that VMF-112's CO Maj Bill Fraser asked the USAAF pilots whether they had been shot-up or shot down. When the answer was shot-up, Fraser told them it could not have been his pilots, as they always shot down their adversaries! He later denied this tempting version of a story that became enshrined in Solomons air war folklore.

The Russell Islands were again the location for a closely fought action between VMF-112 and Zero-sens when a series of engagements took place on June 7, 1943. Mid-morning, 12 Guadalcanal-based Corsairs were directed to take station at 20,000ft overhead the islands. However, a front with heavy rain blocked their climb up to 12,000ft. The Corsairs, struggling to maintain visual contact, had split into two flights of six by the time they exited the front.

WO Ryoji Ohara of the 204th Kokutai kneels on the wing of an A6M5 Model 52 at Lakunai in January 1944. Ohara was credited with the destruction of a Corsair on May 13, 1943, although his fighter was badly damaged by a second F4U-1 and he was subsequently forced to crash-land on Kolombangara. Four Corsairs were shot down that day, including the aircraft flown by VMF-124 CO, Maj William Gise. Ohara joined the Japanese Self-Defence Air Force after the war. (Author's Collection)

Three air groups totaling no fewer than 81 Zero-sens were spaced about 30 minutes apart, having been tasked with flying a fighter sweep of the Allied airfields on the Russell Islands. Reconnaissance photographs of a second airfield at Yandina had exercised Rabaul's staff officers.

Aside from VMF-112's Corsairs, the incoming Zero-sens were met by Wildcats from VF-11, USAAF P-38s and P-40s, and RNZAF Kittyhawks – the Allied fighter force totaled 82 fighters. Led by Lt Zenjiro Miyano, 12 Zero-sens from the 204th Kokutai at Buin approached first, split into four-fighter shotai. Some toted 30kg bombs for attacks on ground targets. Miyano would experiment, unsuccessfully, with the concept for the first and last time on this mission – the 582nd Kokutai would also subsequently arm its fighters with bombs, and enjoy little in the way of success. Miyano's fliers were followed by 36 Zero-sens from the Rabaul-based 251st Kokutai, these aircraft being led by Lt Ichiro Mukai. They had refueled at Buka, and were followed southeast by 21 A6Ms from the Buin-based 582nd Kokutai.

After an opening exchange with VF-11, Miyano's pilots regrouped and then focused their attention exclusively on the incoming Corsairs from VMF-112. On the way home they tangled with a handful of Lightnings and some scattered RNZAF Kittyhawks. Meanwhile, Mukai's 251st Kokutai fought mainly with USAAF fighters to the east of the islands. The last group to arrive, from the 582nd Kokutai, was distracted en route when it diverted to attack TBF Avengers inbound to bomb Buin. This meant that they arrived too late to take on any Allied fighters.

An analysis of exactly where the various IJNAF fighters were during this engagement provides a good opportunity to compare the Corsair against the Zero-sen. It was Miyano's 204th Kokutai that took on VMF-112 after it had been split into two groups by the weather. The first group of six, led by Maj Robert Fraser, were just north of the Russell Islands when they were bounced from 30,000ft by Miyano's lead chutai of eight Zero-sens. Fraser later submitted a detailed critique of the engagement, offering instructive insights on Corsair/Zero-sen rivalry:

> The first two were in a column astern, so I headed for them in a left turn, putting on the master gun switch, adding RPM, blower and throttle and I was ready. My boy executed a gradual diving turn and straightened out in a very steep dive, but that old Corsair closed on him like the dickens. I gave him a burst at 500 yards, allowing a little for bullet drop, and I saw them going home and a couple of little black puffs of smoke came out of the wing roots but didn't burn as I had hoped. He rolled slowly to the left and I rolled with him, shooting him on my back inasmuch as I was over-running him and uncomfortable on my back. I rolled out of it and turned, trying to find him again, but no go, so I chalked him up as a probable.

Meanwhile, Miyano's pilots had shot away half of 1Lt James "Jimmy" Johnson's rudder, shattering his fighter's hydraulic system and deflating a tire. Trying to defend Johnson, 2Lt Gilbert Percy was cornered by a gaggle of Zero-sens that skillfully fought him down to low altitude. With his controls shot out, Percy jumped with a streaming parachute and hit the water hard. With his pelvis broken, both ankles sprained, and numerous bruises, he swam gingerly to a reef, where he endured a painful night. Villagers in a canoe collected him the next morning.

VMF-112 pilot 1Lt "Jimmy" Johnson points to damage he sustained while flying F4U-1 BuNo 02245 on June 7, 1943 over the Russell Islands. He returned safely to Fighter 2, where this photograph was taken. Most Corsairs from VMF-112 had the unit's circular "Wolfpack" motif painted on their fins, as seen here. (Author's Collection)

Following Fraser's escape, he and wingman 2Lt Stanley Synar climbed to medium altitude halfway between the Russell Islands and Buraku Island, where they were again attacked. This time the culprits were Miyano's No. 3 chutai – two shotai of four Zero-sens led by WO Hatsuo Hidaka and FCPO Hiroshi Suzuki. Following this ambush, Fraser produced a literary gem, suggesting the Zero-sen in skilled hands was a worthy adversary:

> After pouring the coal to the F4U we walked up the tail of the Zero ahead like nothing. I gave him a burst but it didn't seem to do any good – smoke puffs again. We must have been indicating 170 knots when he saw me overtaking him and pulled up into a loop – try it sometime in an F4U and see where you end up. That's where I was too – fresh out of airspeed and on my back. However, I gave him a burst halfway up and he flamed on top. I cut the guns and pulled back on the stick – she almost spun because I could feel the stall at the tips, but she finally fell off on a wing.
>
> As I was recovering, trying to get reoriented, there was a bang in the accessory section and tracers started going by, so I rolled right and dove and the oil pressure went to 40lbs. I rolled right again and dove from 7,000ft to 300ft and got squared away to land. The Zero closed on me and bounced a few more rounds on the armor, and then switched back and, from side to side, looked me over. He was out of ammunition, but I thought he was waiting to strafe me in the water. The motor was vibrating badly, backfiring, and finally the prop froze still. I watched the Zero who followed me down to the water, hoping he had gone to UCLA and knew what sportsmanship meant.

Fraser was quickly rescued by a launch just offshore Pavuvu Island. Meanwhile, Hidaka's flyers worked over 2Lt Synar, shattering his oil cooler. He made a beeline for the Russell Islands, where he safely recovered. Following this fight, six VMF-112 Corsairs landed with battle damage at Jandina, including 2Lt Harold Harter's badly shot-up "No. 15."

In the interim, eight Warhawks from the 44th FS/18th FG dove into Miyano's Zero-sens, which had forfeited their initial height advantage by attacking Fraser and

Synar. VMF-112 pilot 1Lt Samuel Logan fired at a Zero-sen chasing a Warhawk, although he in turn had an A6M behind him. Cannon fire took out Logan's flight controls, so he jumped from 18,000ft and deployed his parachute. He then faced a 12-minute descent, during which time a Zero-sen commenced repeated strafing runs against a suspended Logan. During its third pass, Logan spilled his parachute by yanking the front risers, whereupon it suddenly dropped, catching the strafer by surprise. The propeller of the A6M duly severed the Corsair pilot's right foot.

Meanwhile, Logan's plight had been observed by New Zealander Flg Off Michael Herrick, who was on secondment to the RNZAF's Kittyhawk-equipped No. 15 Sqn from the Royal Air Force. He quickly drove the attacker away. Logan came down near the Russell Islands and was rescued by a Marine Air Group 21 J2F-5 Duck. He was delivered to the nearest field hospital, where the remnants of his foot were amputated.

Upon returning to Buin at 1540 hrs, Miyano's pilots recorded that they had fought two groups of eight F4Us. Fourteen Zero-sen refueled and returned to Rabaul at 1740 hrs, where they were required for defensive duties. The 204th had lost three pilots during this battle – FCPO Yoshimi Hidaka, FPO2c Kameji Yamane, and FPO1c Yasuhi Okazaki. Mukai's 251st Kokutai was in worse shape, having lost six pilots to USAAF fighters – FPO1c Masuaki Endo and FPO2cs Toshitaro Sekiguchi, Kanichi Masuda, Setsu Matsuyoshi, Yutaka Fukano, and Yoshio Nakashima.

The destruction of nine Zero-sens contrasts with two Corsairs lost to fuel starvation and three shot down. Three of VF-11's Wildcats were also destroyed, and a Warhawk collided with a 251st Kokutai Zero-sen, giving an equal score of nine aircraft lost per side. However, all nine Allied pilots were saved, whereas all of their IJNAF opponents were lost. The USAAF Warhawk pilots were credited with eight kills, the Lightning pilots claimed three, Herrick scored one, and the Corsair and Wildcat pilots shared 13 between them.

These figures underline that with three Allied claims being made for every actual kill, any allocation of victories to American pilots is speculative. However, a comparison of movement, times, and claims indicates a close one-to-one Corsair/Zero-sen score ratio. The fight left all but two of VMF-112's Corsairs out of action, with the battle-damaged aircraft requiring major engineering repairs to return them to serviceability.

INVASION OF RENDOVA

The invasion of Rendova Island at dawn in a heavy rain storm on June 30, 1943 marked the first major step in the US invasion of the New Georgia group, and the capture of the coveted Japanese airfield at Munda. The small Japanese garrison was soon overwhelmed, with survivors hunted down by Fijian Commandos. Unloading at Rendova was about halfway complete by mid-morning, delayed only by muddy ground slowing the transfer of supplies inland from the narrow gray sandy beach.

Meanwhile, only an hour after the invasion had commenced, four 705th Kokutai G4M "Bettys" launched from Ballale to scour the Rendova area for US naval vessels. Wildcats from VF-21 Wildcats attacked two of the bombers, and downed the aircraft commanded by FCPO Rokuro Saito, but not before his radio operator had informed Rabaul of a lurking flotilla of American transports, destroyers, and landing craft offshore Rendova.

Industrious staff officers at Rabaul then busied themselves planning a suite of counter-attacks against what they correctly perceived was a significant amphibious operation. Four substantive Japanese aerial counter-actions now followed, offering another opportunity to compare the Corsair with the Zero-sen. Maj John Sapp of Cactus Fighter Command had outlined plans to the F4U pilots on the evening of June 29 for a series of ambitious rotating CAPs that would place three fighter groups overhead the Rendova landing beachhead from 0545 to 1825 hrs on a daily basis.

With a low cloud base blanketing Rendova, the first Japanese aircraft appeared overhead at 1115 hrs, halting unloading for an hour. This initial wave comprised 12 Zero-sens from the 204th Kokutai led by FCPO Hideo Watanabe, as well as 16 A6Ms from the 582nd Kokutai. Some of the aircraft in Watanabe's formation were also armed with 60kg bombs for land attacks.

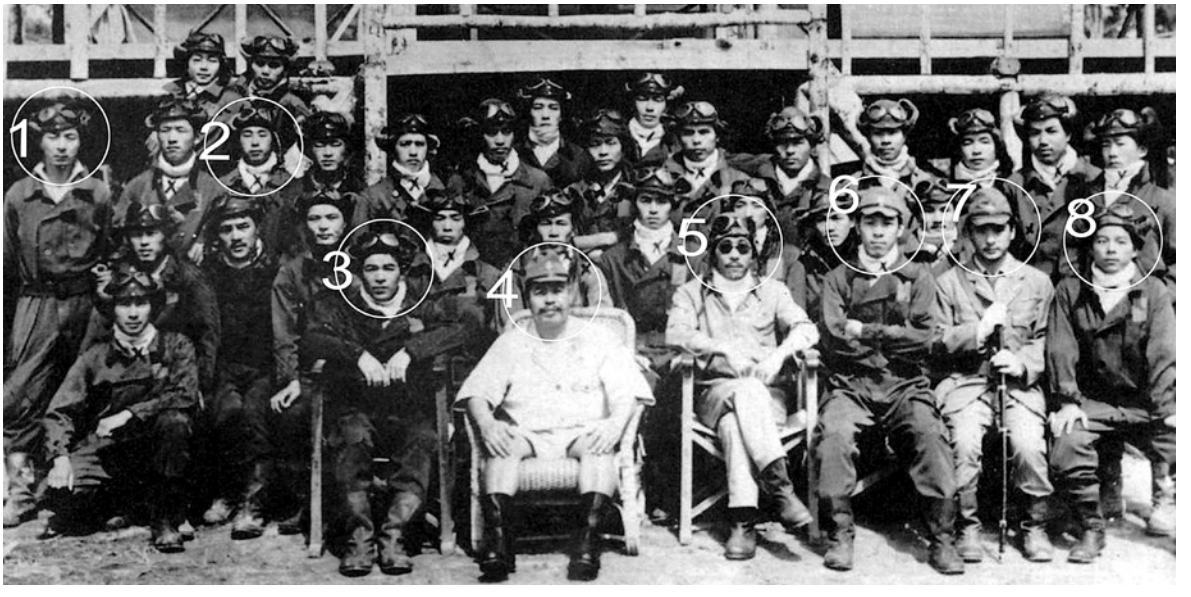
VMF-121 and VMF-122, both units having recently swapped their F4F-4s for F4U-1s, each sortied 16 Corsairs to engage the attackers. VMF-121's Capt R. B. Porter made first contact when he fired at a fighter at 11,000ft over Rendova, claiming one definite kill. Other Corsair pilots from the unit then fell into the fray.

FCPO Hideo Watanabe took over leadership of air operations by the 204th Kokutai in late June 1943 after the unit's officers had been killed in action. He too was badly wounded on August 26 shortly after claiming a B-24 and an F4F destroyed. Watanabe, who had been shot in the head, managed to land before losing consciousness. Decorated for his bravery in action, he was invalided back to Japan but was unable to return to frontline duties. Watanabe had claimed 16 victories while serving with the 204th Kokutai. (Tony Holmes Collection)

Capt Louis Gordon bailed out after his fighter was hit, and he remains Missing in Action to this day. Capt P. L. Shuman fought two Zero-sens at 15,000ft southwest of Rendova, claiming them both destroyed before his guns jammed. He descended to clear them, engaging another enemy fighter at only 600ft. Capt R. M. Baker intercepted seven Zero-sen at 12,000ft, claiming one which he followed to the ground and saw crash. He fought another at 7,000ft, then machine-gunned the pilot in his parachute. Slightly higher at 15,000ft, Capt W. H. Whitaker fought an estimated six Zero-sens, shooting one down in flames. He noted that it had square wingtips and was gray overall, identifying his opponent as a machine from the 582nd Kokutai. 2Lt Robert Dailey's engine seized opposite Viru Harbor, on New Georgia, so he jumped at 3,000ft. Dailey was rescued by an LST after briefly spending time in his dinghy, and he subsequently returned to his squadron on July 3. 2Lt Robert Foxworth was also shot down and reported as missing, before he appeared back at base the following day.

Capt W. A. Baron joined up with Porter, and the pair were attacked by about eight Zero-sens. Baron sustained several 20mm hits to the wings of his Corsair, and a bullet cut his headphone cord. Then a shell shattered his radio compartment and left him wounded, so he dived away and leveled off at 2,000ft. Baron now decided to head for home in the Russell Islands, but ran into a weather front trying to get there. Faint from blood loss, he called it quits and ditched near an LST, which rescued him.

The IJNAF units again made inflated claims following this engagement, with the 582nd Kokutai being credited with ten kills and the 204th Kokutai 14 kills. Five Corsairs had in fact been shot down. In turn, the F4U pilots claimed 16 Zero-sens



The 582nd Kokutai's pilot cadre pose for a photograph outside the Vunakanau fighter operations center on June 2, 1943. The unit commanders and flight leaders are (numbered) as follows – 1. WO Ki'ichi Nagano, 2. WO Tomezo Yamamoto, 3. Lt Usaburo Suzuki, 4. hikocho Capt Sakae Yamamoto, 5. Lt Cdr Saburo Shindo, 6. Lt(jg) Gi'ichi Noguchi, 7. WO Kazuo Tsunoda and 8. WO Yoshihito Takenaka. Many of these aviators perished in combat during July 1943. (Author's Collection)

destroyed, when only three had been lost. The latter all came from the 582nd Kokutai, with FPO1c Nobutaka Yatsunami, FPO2c Takamichi Sasamoto, and FCPO Nobuo Ochi'i failing to return. The unit also had another Zero-sen badly damaged and a fourth aircraft destroyed when it force-landed back at Buin.

After the first combat had subsided, at the beachhead a temporary command post on a nearby hill had been completed alongside a radar and communications truck. By 1500 hrs, all 50 tons of supplies were safely ashore. Shortly thereafter, the first warships began to withdraw. However, the weather had worsened during the afternoon, with visibility negligible due to heavy rain and squalls. These conditions would wreak havoc on aircraft from both sides over the next few hours.

In an attempt to make the most of the poor weather, 26 G4M1 "Bettys" armed with torpedoes departed Vunakanau and headed for US warships off Rendova. Seventeen of the aircraft were from the 702nd Kokutai, led by Lt Cdr Genzo Nakamura, with the remaining nine from the 705th Kokutai, led by Lt(jg) Shinichi Shinohara. They were escorted by 24 Zero-sen Model 22s from the 251st Kokutai, led by Lt Ichiro Mukai. These fighters would be intercepted at 1543 hrs by both Corsairs and Wildcats.

Heading for Rendova at much the same time as the IJNAF bombers, VMF-122 F4Us had flown into thick squalls shortly after departing for their scheduled CAP. Conditions were so bad in fact that when 1Lt Henry Bourgeois' wingman, 2Lt David Brennan, developed engine trouble en route from Guadalcanal and turned back, Bourgeois attempted to escort him home but was unable to keep him in sight. Having soon lost his bearings, Bourgeois then stumbled upon a lone Japanese bomber, clearly also lost and heading the wrong way towards Guadalcanal. He duly claimed it as destroyed – Bourgeois' victim was almost certainly the 705th Kokutai "Betty" that crashed into Guadalcanal's mountain range late that afternoon.

Shortly thereafter, Bourgeois attached himself to a gaggle of SBD Dauntless dive-bombers from VB-11 that also turned out to be lost. Ultimately, he and the SBDs

ditched in a lagoon near Rennell Island, badly off track and a long way south of Guadalcanal. Bourgeois finally made it back to base the following day.

Despite the bad weather, the Corsairs that were already overhead Rendova on CAP wreaked havoc among the "Bettys," only ten of which successfully released their torpedoes. After finding no merchantmen in the target area, the bomber crews had headed down New Georgia's southern coast to menace several vessels seen in the distance. They scored a solitary torpedo hit on the attack transport USS *McCawley* (APA-4), which later sank.

Corsairs from VMF-121, VMF-122, and VMF-221 (which had just switched from F4F-4s), alongside Wildcats from VF-21, now had a field day with the retreating "Bettys," downing a confirmed 13 aircraft from the 702nd Kokutai and five from the 705th Kokutai, with a sixth destroyed from the latter unit when it force-landed at Rabaul.

After VMF-122 had fought the "Bettys," its pilots now turned their attention to Mukai's Zero-sens, which had strafed the landing area at 1546 hrs. Although the Corsairs arrived over Rendova after the attacks had been made, they still claimed four fleeing Zero-sens. Lt Wood had a lucky escape after his Corsair inadvertently entered a spin at 9,000ft whilst avoiding an oncoming Japanese fighter. Having tried, unsuccessfully, to open the canopy to bail out, Wood somehow regained control just above the water.

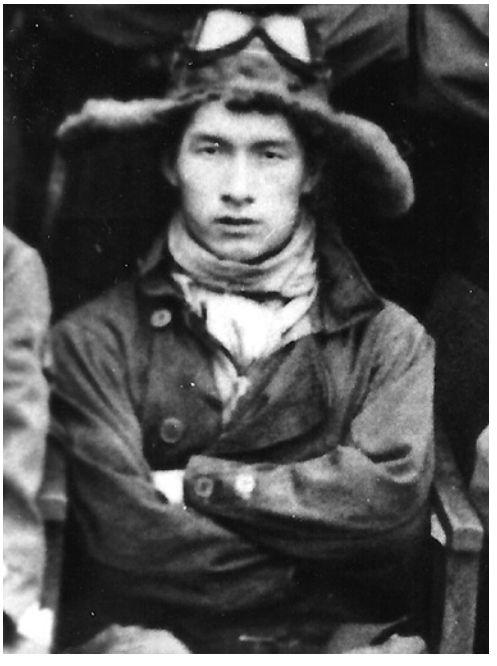
The Corsair of future CO Maj Joseph Reinberg was shot up by a persistent Zero-sen and he bailed out, beaching his dinghy on Rendova's north coast that night. With no-one in sight the next morning, he took to sea in the same dinghy and was rescued by the destroyer USS *Woodworth* (DD-460), which returned him to Guadalcanal three days later. Capt Harold Gardner was another VMF-122 aviator who went missing, last seen fighting Zero-sen.

Meanwhile, VMF-213 Corsairs also tangled with Zero-sens, and their pilots were later awarded 11 victories. In return, the A6M pilots shot down 2Lt Milton Peck and unit CO Maj Gregory Weissenberger, whose mount was shattered in a head-on pass after he had claimed three fighters destroyed. He jumped at low altitude and his parachute opened just before he hit the water. Weissenberger was returned to Guadalcanal by destroyer with badly bruised ribs, having hit the tail of his stricken Corsair when he bailed out.

VMF-221's pilots would claim 14 "Bettys" and four Zero-sens destroyed on June 30, and 1Lt Frank Baldwin managed to survive a series of engagements with only one serviceable gun.

The Zero-sens of Lt Ichiro Mukai's 251st Kokutai paid a disproportionate price in this fight, losing nine aircraft in combat. Mukai himself was shot down, along with two more chutaicho, Lt(jg)s Takeyoshi Ono and

1Lt Frank Baldwin of VMF-221 poses in the cockpit of his F4U-1 in the Russell Islands on July 3 1943, three days after he had survived combat over Rendova Island. While providing CAP over the US invasion force, VMF-221 Corsairs claimed 14 "Bettys" and four Zero-sens destroyed. However, when engaging an A6M, Baldwin found himself with only one serviceable machine gun. He nevertheless claimed it as destroyed, along with one of the "Betty" bombers. Baldwin would later achieve ace status with VMF-221 flying from the carrier *Bunker Hill* during the invasion of Okinawa in April 1945. (Author's Collection)



Lt(jg) Takeyoshi Ono joined the Tainan Kokutai at Rabaul in 1942 after completing his flying training. He claimed five victories prior to returning to Japan in November of that same year. He was posted back to Rabaul in May 1943, becoming a buntai leader with the 251st Kokutai. Ono would see considerable action through to June 30, when he was one of nine pilots from the unit killed trying to escort "Betty" bombers sent to attack the US landings at Rendova Island. He had claimed eight victories up until he death. (Tony Holmes Collection)

Mitsuteru Hashimoto. Amongst the remaining pilots lost were FPO2cs Hiroshi Iwano, Nobuo Konishi, Uichiro Ando, Kazuo Fukui, and Shunichi Hiromori. Battling bad weather, nine aviators struggled back to Buin, where they were joined at 1845 hrs by six more A6Ms. Two Zero-sens had been seriously damaged, one force-landed, and six more had been holed by gunfire.

Nonetheless, seven Corsairs and four Wildcats had been lost in this second dogfight, although some of the F4Fs were more likely hit by defensive fire from the "Bettys." Again, it is telling that of the 11 US pilots that were downed, eight lived to fight another day. An approximate one-to-one kill ratio between the Corsair and Zero-sen is also apparent from this engagement. Two more attacks materialized later that same afternoon, although no Corsairs were involved.

From the day's multiple engagements, the F4U units had claimed 30 Zero-sens destroyed, the Wildcat squadrons 19, and USAAF fighters three. In fact, only 12 A6Ms were shot down (nine from the 251st Kokutai and three from the 582nd Kokutai), against the loss of nine Corsairs and four Wildcats. The ratio of Corsair to Zero-sen kills cannot be assessed precisely due to the widespread involvement of different types. However, analysis of timeframes and targets again indicates an approximate one-to-one loss ratio.

The "Betty" units had been hit hard on June 30, with Rabaul's 11th Air Fleet having lost about a quarter of its strength. More ominously, the substantive IJNAF efforts on that day had barely impeded the Rendova landings. That evening, Vice Admiral Jinichi Kusaka requested bomber reinforcements be immediately flown to Rabaul from Saipan.

VELLA LAVELLA LANDINGS

August 15, 1943 witnessed three consecutive aerial battles focused upon the landings on Vella Lavella, where US Navy Seabees had immediately commenced construction of another airfield at Barakoma in the advance towards Rabaul. The IJNAF had again been caught flat-footed by another American amphibious landing, although this time the Zero-sens at Buin were only an hour's flying time from Vella Lavella.

Allied fighter units quickly forward-deployed to, and launched from, the recently captured airfield at Munda, undertaking a series of rolling CAPs overhead the invasion beach on Vella Lavella. The defense of the Barakoma beachhead fell to Corsairs from VMF-123, VMF-124, VMF-214, and VMF-215, as well as USAAF Warhawks and RNZAF Kittyhawks.

The day's exceptionally clear weather saw the first strike, comprising Zero-sens and "Val" dive-bombers from four different groups, launched at 0700 hrs. The first fighters aloft headed for US Navy warships, whose presence had been radioed to Buin by the embattled Japanese infantry on Vella Lavella. A combined contingent of 15 A6Ms from *Ryuho* and *Junyo* and six "Vals" from *Junyo* was led by the latter carrier's fighter buntaicho, Lt(jg) Keigo Fujiwara. *Ryuho*'s pilots had scrambled so quickly for this first

strike that the carrier's operations clerk had insufficient time to record the names of those that took off. Following above and behind was a combined fighter sweep of eight 201st Kokutai and 24 204th Kokutai Zero-sens, all led by the 204th's division officer, Lt(jg) Usaburo Susugi.

Warned by shipboard radar, Corsairs from VMF-123 and VMF-124 climbed out from Munda to meet the incoming formations. VMF-124's 2Lt Edmond Hartsock crashed on takeoff, destroying his fighter and incurring bruises and lacerations. 1Lt William Bedford led the remaining fighters from the unit until he was forced to withdraw when he discovered that only one of his six machine guns was working.

1Lt Troy Shelton from VMF-124 spotted a "V" formation of six "Vals" covered by three groups of Zero-sens at about 20,000ft. The unit scattered, with VMF-123 still some 15 miles behind. Four Corsairs from VMF-123 then ran into 36 A6Ms from Susugi's 204th Kokutai at 21,000 ft, attacking the rearmost section of IJNAF fighters out of the sun. Baker claimed two Zero-sens destroyed and Bowles one. Mutz was chased by six fighters, overheating his carburetor and forcing him to slow down, at which point his attackers simply vanished.

Twenty-year-old WO Ki'ichi Nagano at Buin with A6M3 Model 22 "106" in mid-1943. Nagano flew with the 582nd Kokutai until its last combat mission from Buin on July 23, 1943, by which time the unit had fought itself almost to a standstill, resulting in its disbandment shortly thereafter. Nagano was transferred from the theater and was later killed over the Philippines on November 6, 1944. (Author's Collection)

Low on fuel from combat, VMF-124's Harter ditched offshore Wana Wana Island and was hauled aboard a PT boat with a bruised face and wounded pride. Allied fighters then focused their attention on the incoming carrier-assigned Zero-sens, trying to defend their "Vals" at higher altitude. At 0827 hrs landing ship LST-395 logged a fighter crashing into Boga Island – this could have been *Junyo* buntaicho Lt(jg) Keigo Fujiwara. The 204th Kokutai also lost Lt(jg) Masao Shimada, FPO1c Norimasa Narahara and FPO2cs Motoharu Imazeki and Tetsuo Hidaka. The combat tally from this morning mission was five Zero-sens and six "Vals" destroyed, against Allied losses of one Kittyhawk shot down and two Corsairs ditched.

While this first encounter unfolded, frenzied planning for a follow-up attack ensued at Buin. *Ryuho* prepared six more "Vals," joined by five from *Junyo* that would lead a D3A attack with aircraft from both carriers. This time 16 Zero-sens would also escort the dive-bombers – four A6Ms from *Ryuho* and 12 from *Junyo*. Separately, the 201st Kokutai launched 13 Zero-sens to conduct the forward fighter sweep of Vella Lavella. To underline just how much pressure the IJNAF was now under, a hot and weary Lt(jg) Usaburo Susugi returned to his cockpit for the second time that day to lead the Zero-sen formations, which included 16 aircraft from his own 204th Kokutai.

At 1213 hrs, US Navy shipboard radar plotted the inbound enemy at 14,000ft. Fourteen minutes later, the first flight of "Vals" unsuccessfully bombed the destroyers USS *Conway* (DD-507) and USS *Eaton* (DD-510), with both vessels then being strafed by seven *Ryuho* fighters.

Two Corsairs flown by Maj Raynold Tomes and TSgt George Kross of VMF-215 appeared over the beachhead at 17,000ft at 1230 hrs, and they ignored five Zero-sens

F4U CORSAIR FORMATION

US Marine Corps and US Navy units equipped with the F4U modified and improved combat tactics as the campaign in the Solomons progressed during 1943. Squadrons placed the greatest emphasis on teamwork, and the most fundamental formation was the division of four fighters. Although each division could be split into two sections of two aircraft, it was stressed to pilots that they should never fight by themselves.

– The first Corsair squadron to see combat in-theater was VMF-124, which was briefed by Cdr Joseph Clifton prior to its departure from California. He had had the unique experience of flying a captured Zero-sen against an F4U-1 during extensive flight trials in the USA. His key points were;

– The Zero-sen could not follow a Corsair in a hard right turn at speeds in excess of 240 knots.

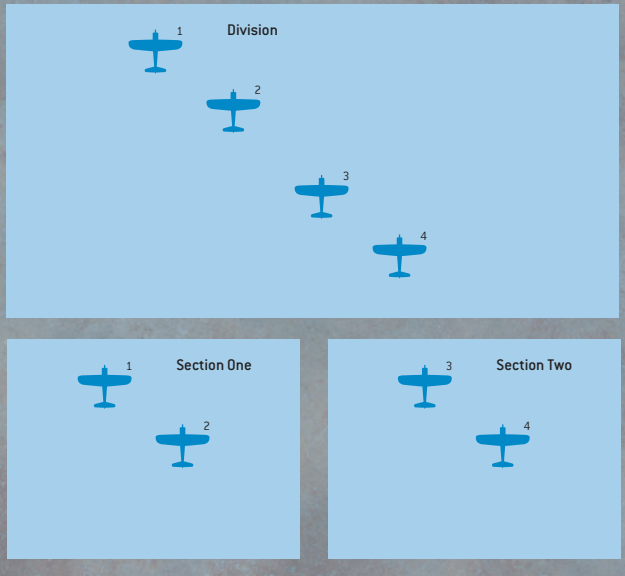
– The Zero-sen could not roll with a Corsair in level flight.

– The maneuverability of the Zero-sen was deadly.

– Altitude advantage was paramount for an attack.

– The "Thach Weave" was a good tactic to employ. Divisions and/or flights had to stay together.

These guiding principles became the basis for all Corsair tactics used and modified in-theater. Depending on the target, a division could split to "box in" a target. This was a favorite tactic used against slower-moving aircraft such as bombers or dive-bombers.



loitering at the same altitude and instead chased a solitary fleeing solitary "Val" spotted below them at 2,000ft. Using their superior airspeed, they caught the dive-bomber with ease and, according to several eyewitnesses, sent it crashing into nearby foothills.

Separately, other Corsairs, along with USAAF Warhawks and Airacobras, battled more Zero-sens from the 201st Kokutai at around 1230 hrs. From these encounters one *Junyo* pilot was seriously injured and five 201st Kokutai fighters were badly shot up.

Back at Buin, the final daylight raid was assembled. Both the 204th Kokutai and *Junyo* contingent each launched eight Zero-sens, while the 251st Kokutai fielded 16 Model 22s led by Lt(jg) Yoshio Ooba. Lt(jg) Usaburo Susugi, exhausted from leading the previous two missions, stood down. He relinquished leadership of the 204th Kokutai contingent to the trusted WO Morio Hakiri, who, in addition to striking the landing forces, would also shepherd eight *Ryuho* "Vals."

Hakiri's Zero-sens launched from Buin at 1625 hrs, although the hastily-assembled plan was disrupted at 1730 hrs when the progressing IJNAF aircraft met fierce opposition at 16,000ft from 18 CAP Corsairs that were joined shortly thereafter by eight USAAF Airacobras that had scrambled from Munda. Two VMF-124 Corsairs were lost at Munda that same afternoon when Capt Dean Raymond and 2Lt William Johnston collided on takeoff, with the badly-wounded Johnston evacuated to Guadalcanal.

Meanwhile, four VMF-123 Corsairs were vectored onto the incoming "bogies" at 1700 hrs, and 20 minutes later they claimed one Zero-sen as definitely destroyed. However, Blaine was then forced to ditch not far from Munda with a dead engine. Friendly villagers who sheltered him told Blaine that they had recently captured 204th Kokutai pilot Leading Airmain Saichi Fukuda, who they misleadingly told they would escort to safety. Instead, they took him to a nearby island, away from their women and children, where he was beheaded on January 23, 1943.

This was an afternoon of much action, for at 1715 hrs six Zero-sens strafed the port bow of landing ship LST-395. Moments later, VMF-124's 2Lt Ken Walsh attacked two "Vals" and a Zero-sen (he subsequently claimed all three shot down) before retaliatory gunfire tore up his starboard inboard wing, port aileron, and main gear. Having also been wounded, Walsh suffered vertigo on his return to base and broadcast that he would ditch, but changed his mind and returned to Munda instead. The ensuing landing wrote off his Corsair at around the same time as the last returning Zero-sen touched down at Buin at 1820 hrs. Three A6Ms were lost in this final clash over Vella Lavella, with FPO2c Munenori Shimizu and FCPO Tokio Sawada from *Junyo* and the 204th Kokutai's FPO2c Seizaburo Watanabe all being killed.

The Corsairs had done their job by deterring the "Vals" from bombing the beachhead, although all of the dive-bombers returned safely to Buin, despite numerous Allied claims to the contrary. At last light, Capt Miller led seven Corsairs from VMF-214 on a low-level retaliatory attack against Kahili. While Miller's attackers were credited with seven aircraft destroyed on the ground and in the circuit overhead the airfield, no aerial combat actually took place.

Once again, the day's complex actions obfuscate any effort to apportion tangible victories as opposed to those claimed. COMAIRSOL Fighter Command compiled the day's scores by combining the unit tallies from the US Marine Corps, USAAF, and RNZAF for all three daylight raids. Thirteen Zero-sens were credited to the Corsairs, two to the Warhawks, one to the RNZAF Kittyhawks, and one to the USAAF P-39s, against actual losses of seven IJNAF fighters. It also awarded seven "Vals" to the Corsairs, one to the P-40s, and three to the RNZAF. Two (or more) "Vals" were shot down by anti-aircraft fire, leaving nine (or less) to have been destroyed as a result of aerial combat.

In summary, this means 28 kills were awarded to Allied units, when only 14 aircraft were lost, and even that number is in doubt due to the numerous claims made by gunners on board US Navy warships. Allied losses totaled one Warhawk and seven Corsairs, with four more F4Us destroyed in operational accidents. These numbers make it apparent that at least in terms of Corsairs versus Zero-sens, the IJNAF pilots gave almost as good as they got.

HORNET'S NEST AT KAHILI/BUIN

In late August 1942, after the southern coast of Bougainville had been occupied by the Japanese, an IJN construction unit began leveling a single 1,450m-long runway through the jungle that was later surfaced with crushed coral and tar. With a large rectangular parking area located at the complex's southern end, the airfield was christened Buin in katakana, and it was given the R-area code RXP. The Allies referred

OVERLEAF

On February 4, 1944, Ens Percy Divenney of VF-17 was escorting USAAF B-24s overhead Tobera airfield, southwest of Rabaul, when the formation was intercepted by 23 Zero-sens from the 253rd Kokutai painted in "Rabaul Air Force" markings. These aircraft were operating in four-fighter shotai, and included several late Model 52s with protruding exhaust stubs. In the heat of battle, Divenney accidentally mistook the emergency gear release handle for the one that purged the wingtip fuel tanks using CO_2 stored in a high-pressure cylinder. When his undercarriage half-lowered, Divenney's Corsair slowed considerably and he was jumped by eight Zero-sens. Three other Corsairs from VF-17 closed in to try and protect him, but Divenney was overwhelmed and shot down in F4U-1A BuNo 17949. He was one of two pilots from VF-17 lost during this mission.

to the airfield as Kahili, after the similarly-named village nearby. At its peak the base housed more than 100 fighters.

Along with the nearby airfield on Ballale Island, the floatplane fighters based in the nearby Shortland Islands and warships anchored in Tonolei Harbor, Kahili became a key target for Allied air operations. Such sorties were always stridently opposed by IJNAF fighters, as proven during the inaugural February 14, 1943 Corsair escort mission over the area. Since then, Allied fighter escort tactics had been upgraded, reassessed, and improved.

A mission of August 30 to bomb Kahili/Buin airfield was met by expected, and fierce, Japanese resistance, resulting in Lt Ken Walsh being credited with four victories and subsequently being awarded the Congressional Medal of Honor. The main strike force consisted of 27 B-24s from the 307th Bombardment Group (BG), escorted by 24 Corsairs and an identical number of USAAF and RNZAF fighters.

The stratagem was that VMF-124's 12 Corsairs would depart Guadalcanal just before noon, refuel in the Russell Islands and then rendezvous with the bombers and 12 Corsairs from VMF-123 overhead Munda. All would then head for Kahili. However, 2Lt John Kuhn crashed when landing in the Russells, reducing the VMF-124 complement to 11 Corsairs. Then, after refueling at Munda, the engine in Walsh's fighter ran rough, so he back-tracked to Munda and jumped into a Corsair from VMF-215, which he flew pell-mell to catch up with the others.

Over south Bougainville at 16,000ft, the Corsairs were challenged by 23 Zero-sens from the Ballale-based 201st Kokutai and 20 A6Ms from the 251st Kokutai at Buin. These aircraft were joined a few minutes later by 20 fighters from the 204th Kokutai, led by WO Morio Hakiri. The 63 Zero-sens approached the Allied formation in five widely spread formations.

Several Corsair pilots were surprised to see smoke bombs dropped by A6Ms from 22,000ft, their detonation being marked by umbrella-like plumes of white smoke. These were Type 99 30kg air-to-air bombs dropped by Hakiri's formation overhead the bombers. A fierce 30-minute fight then spread south of Bougainville, and four Zero-sens were downed. The 201st Kokutai lost FCPO Jisaku Kaneko and the 251st Kokutai had FPO2cs Shigeo Hayashi and Masatomi Himoto and FCPO Iki Arita killed.

The Allies paid a heavier price, however, losing a B-24 40 miles southeast of Kahili after it broke up and spun down into the ocean. Two Airacobras and a Warhawk were also shot down, as were three Corsairs. Future ace 1Lt Howard Finn of VMF-124 was lucky to escape with his life when he collided with a Zero-sen. He landed safely at Munda minus a port elevator. Squadronmate 2Lt James Fowler was posted missing, while a Zero-sen pursued VMF-123's 2Lt Walter Mayberry and shot him down just off the Shortland Islands. Mayberry bailed out and was collected by an IJN launch. Later incarcerated at Rabaul, he was among a group of Allied prisoners executed on March 5, 1944.

1Lt Ken Walsh ditched off Vella Lavella after his fighter was shot up. He was then ferried ashore by Higgins boat, from where he was returned to Guadalcanal the next day. Walsh's determination to proceed with the mission after having swapped aircraft, then allegedly shooting down four Zero-sens followed by his ditching, secured him a Congressional Medal of Honor. Again, an accurate alignment of kills

is unworkable. A comparison of times and engagement indicates it was likely that the Liberator gunners (who separately claimed 20 fighters destroyed!) shot down 201st Kokutai pilot FCPO Kaneko, while Allied fighters destroyed the three 251st Kokutai A6Ms. Total Allied fighter claims were 14 Zero-sens, versus three that were actually downed.

RABAUL CARRIER STRIKES

Although the Fifth Air Force claimed it had neutralized Rabaul following the substantive October–November 1943 campaign, this was not the case. Meanwhile, Commander, South Pacific Area Admiral William Halsey was implementing the final phase of his advance up "The Slot." For three days commencing November 1, 1943, 14,000 Marines landed at Empress Augusta Bay, halfway up the west coast of Bougainville. Soon they were building an airfield complex at Torokina.

Although Halsey had not contemplated an air attack on Rabaul, his hand was forced when Admiral Mineichi Koga countered the invasion by ordering naval reinforcements to Rabaul from Truk. These included a potent cruiser force, which prepared for battle once once they reached New Britain. The only substantive forces Halsey had at hand to oppose such an attack were the air groups from the Task Force (TF) 38 carriers *Saratoga* and USS *Princeton* (CVL-23).

With his landing now directly threatened, Halsey ordered both carriers to steam northward through the night of November 4–5 so as to be within striking range of Rabaul for a surprise dawn raid. Launching behind the cover of a frontal system, both carriers sortied all available aircraft against the target, leaving no fighters spare for CAP. This was a risky strategy, but Halsey was rewarded for his boldness with a successful strike.

Two days later, TF 50.3 reached the area comprising the carriers USS *Bunker Hill* (CV-17), USS *Essex* (CV-9), and USS *Independence* (CVL-22), escorted by destroyers. *Bunker Hill* and *Essex* were next-generation fast carriers that had only recently become operational, and in combination with TF 38, they undertook an even bigger strike against Rabaul on November 11. TF 38 launched its aircaft northwest of Bougainville, while TF 50.3's strikes took off in the Solomon Sea, southeast of Rabaul.

Cover for TF 50.3 was provided by 23 F4U-1As from VF-17 led by Lt Cdr Tom Blackburn and 12 F6F-3s from VF-33. Both units were shore-based at the recently completed Ondonga airfield, on New Georgia. VF-17, which had only been operational for two weeks, arrived overhead the carriers, where they provided CAP. After the strike force had launched, Blackburn's Corsairs landed on board *Bunker Hill* (the vessel on which the unit had done its

CO of the US Navy's only Corsair unit in the Solomons, Lt Cdr Tom Blackburn saw considerable action leading VF-17 from the newly-completed airfield at Ondonga, on New Georgia. He was credited with 11 victories (nine of them A6Ms) between November 1, 1943 and February 6, 1944. (NHHC)

One of VMF-214's best-known publicity photographs was this shot with pilots sporting baseball bats and St Louis Cardinals caps, which was taken at Vella Lavella in late December 1943. Standing third from the right in the front row is the unit commander and high-scoring ace, Maj Gregory "Pappy" Boyington. (Tony Holmes Collection)

shakedown cruise with Carrier Air Group 17, before being detached ashore on September 28, 1943 due to ongoing carrier suitability issues with the F4U-1) and refueled and rearmed. They subsequently launched again to cover the returning aircraft from the strike.

Despite having refueled mid-mission, the demands on Corsair endurance were excessive, and complicated by poor weather. After three had headed back to Ondonga early with low fuel margins, the remainder fought around 50 incoming Zero-sens, "Vals," B5N "Kate" torpedo-bombers and "Bettys", as well as Ki-61 "Tony" fighters from the 68th Sentai of the Imperial Japanese Army Air Force (IJAAF), despatched from New Britain in a retaliatory strike on *Bunker Hill*. Following combat, Corsair pilots Ens Robert Hill and Bradford Baker ditched due to low fuel, but they were rescued by a PBY. Lt John Kleinman was wounded and his fighter damaged when a "friendly" 20mm shell fired by a US Navy warship exploded in the cockpit. He made it back safely to Ondonga.

Whilst the many and diverse combatants involved in these actions are too numerous to draw any meaningful combat comparisons between opposing types, the assignment of land-based US Navy Corsairs to perform CAP over a carrier force is unique in the Pacific War, and worthy of mention.

The second carrier strike of November 11 effectively neutralized the cruiser threat to Halsey's Bougainville landings, and with the possibility of additional air strikes, the warships returned to Truk the next day. This all but ended the IJN's naval presence at Rabaul. With the establishment of airfields at Torokina having brought the Japanese fortress within range of US land-based aerial tactical units for the first time, the stage

was now set for a campaign that would indeed finally neutralize Rabaul. This officially commenced on December 17, 1943.

Corsairs made their first appearance over Rabaul on the first day of the campaign. In response to enemy fighters approaching over southern New Ireland, Lt Suzuo Ito of the 204th Kokutai led seven Zero-sens in a climb eastwards from Vunakanau at 1015 hrs. The lead formation of 22 RNZAF Kittyhawks was led by Wg Cdr Trevor Freeman, followed closely by 32 Corsairs from VMF-214, VMF-216, VMF-222, and VMF-223. The F4Us were led by VMF-214 CO Maj Gregory Boyington. In between the Kittyhawks and Corsairs were 24 Hellcats from VF-33 and VF-40. This was a major mission, and the sheer number of Allied fighters involved reflected just how well-equipped COMAIRSOL Fighter Command had become by late 1943.

These Allied formations had departed Ondonga and Vella Lavella at dawn and refueled at Torokina. Following Ito's seven Zero-sens, two more A6M formations of eight aircraft from the 201st Kokutai and 39 from the 204th Kokutai launched at 1040 hrs. About ten miles to the southeast at Tobera, an eclectic mix of 253rd Kokutai A6M Model 21s, 22s, and 52s also took off, the last of which was airborne at 1055 hrs.

The Japanese fighters split into two groups when it was realized that the RNZAF Kittyhawks had unintentionally proceeded well ahead of the American fighters. Separate Allied formations had not been planned, however, and the rest of the mission was flown as briefed – the Kittyhawks would patrol the lower altitudes between 10,000–15,000ft, the F6F Hellcats at medium altitudes between 15,000–20,000ft, and the Corsairs higher at 20,000–26,000ft. From their high, but distant, vantage point, the F4U pilots spotted Ito's seven Zero-sens fall upon the RNZAF Kittyhawks ahead west of Hunter Point, on New Ireland. From this initial clash, two Kittyhawks were downed.

Then it was the turn of the Corsair and Hellcat pilots to tangle with the Zero-sens in engagements that ranged from skirmishes to close and persistent combat. Although VF-40 found no enemy fighters at their altitude, VMF-214 became embroiled in widespread fighting mainly with the 253rd Kokutai over Gazelle Peninsula. Its Zero-sens had returned to Tobera by 1140 hrs, and the unit's pilots were the only aviators from the IJNAF to report combat with Corsairs.

Following this action Allied squadrons claimed 11 Japanese aircraft destroyed – seven by RNZAF Kittyhawk pilots and four between the various US squadrons. Aside from a 958th Kokutai E13A "Jake" floatplane that was shot down by Corsairs as it tried to land at Malaguna Bay, three Zero-sens were also lost. One 201st Kokutai pilot bailed out and was rescued and the 204th's Superior Airman Isamu Haruyama was missing, as was the 253rd Kokutai's Superior Airman (first name undecipherable in IJNAF records) Kato, who had likely fallen victim to a Corsair. Six more Zero-sens were hit, with Superior Airman Kojiro Kawado being wounded.

With the aerial action taking place overhead Japanese-held territory, many Zero-sen pilots who were shot down took to their parachutes and lived to fight another day. On the other hand, all Corsair pilots were now acutely aware that bailing out near Rabaul meant possible rescue but more likely capture, and all the inherent dangers this portended.

Capt George Ashmun of VMF-214, photographed at Ondonga in late 1943. He was Maj Gregory Boyington's wingman on January 3, 1944 over Rabaul when the division of four F4U-1As he was part of was overwhelmed by a chutai of Zero-sens from the Tobera-based 253rd Kokutai. Ashmun was shot down and killed after claiming a Zero-sen destroyed, and Boyington was forced to bail out shortly thereafter. (Author's Collection)

BOYINGTON SHOT DOWN

The activities of Maj Greg "Pappy" Boyington and his Corsair squadron were immortalized in the 1976 television series "Baa Baa Black Sheep", based on his similarly titled autobiography. Boyington received the nickname "Gramps" because aged 31 when he commanded VMF-214, he was a good decade older than most of his pilots. This nickname in turn was changed to "Pappy" in a variation on "The Whiffenpoof Song," whose revised 1909 lyrics were penned by one of his pilots, fellow ace 1Lt Paul Mullen. This modified moniker was quickly adopted by war correspondents, of whom there were many in the theater in late 1943.

After leading many combat missions, and having claimed 22 kills (all of them Zero-sens – he also claimed two aerial victories in China with the American Volunteer Group in February 1942) in the Pacific theater, Boyington was shot down on January 3, 1944 near Rabaul in circumstances which continue to be misrepresented. At 0640 hrs Boyington departed Torokina to lead another substantive fighter sweep over Rabaul. He was in tactical command of 48 fighters – eight VMF-214 Corsairs, 20 more F4Us from VMF-211 and VMF-223, and 20 F6Fs from VF-33. En route, two Corsairs from VMF-223 and four from VMF-214 aborted, beset with an assortment of electrical, hydraulic, and oxygen problems.

The three staggered formations arrived overhead Saint George's Channel at between 20,000–24,000ft, whereupon Boyington led them in a wide turn to starboard over the area in poor, hazy visibility, with a solid overcast at 28,000ft. First contact for Boyington's division of four Corsairs from VMF-214 was at 0815 hrs overhead Tobera, home to the 253rd Kokutai. Here, the Corsairs fought an estimated 12 Zero-sen at 19,000ft, with Capt George Ashmun, 1Lt Bruce Matheson, and Boyington each being credited with a kill.

However, Ashmun was shot down and posted Missing in Action and Boyington's fighter was hit by a 20mm shell that shattered the Corsair's belly and wounded the pilot in the legs, head, and forearm. He descended, then leveled off, and flew briefly over Saint George's Channel. Then his fuel tank caught fire, and he broadcast he was ditching. At around 0845 hrs Boyington jumped out low, his parachute deploying just above the waves. He was soon picked up by a Japanese submarine and incarcerated at Rabaul.

Boyington's division had fought a chutai of Zero-sens from the 253rd Kokutai, which had sent aloft 37 A6Ms (four of which toted 30kg aerial bombs) in three chutai of four-fighter shotai under the leadership of Lt Kenji Nakagawa. The kokutai claimed seven Corsairs destroyed, awarded as a group and not individually. Nakagawa's chutai of 11 (only three in Nakagawa's shotai) reached 19,000ft first, and it appears likely these were the aircraft engaged by VMF-214. All 37 of Nakagawa's Zero-sens returned safely to Tobera at 0900 hrs, with one pilot slightly injured and another airframe damaged by gunfire.

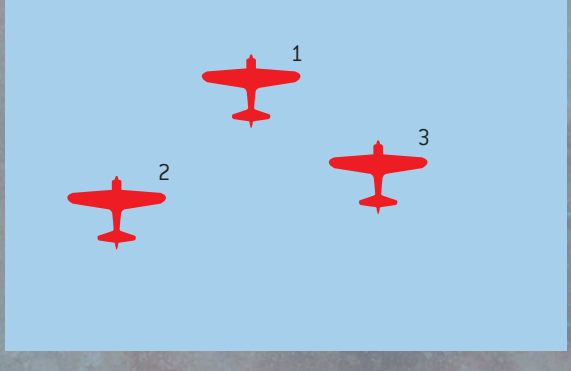
A6M ZERO-SEN FORMATION

By the end of the Solomons campaign, the four-aircraft shotai formation had replaced the traditional three-aircraft shotai, with this change being driven by the need to cater for the influx of inexperienced pilots. However, the larger formation was unpopular with IJNAF pilots at first, and units were slow to implement it. It was the 204th Kokutai that initiated the practice, and by December 1943 the four-fighter shotai formation had become ubiquitous amongst Rabaul's fighter units.

It had the advantage of being able to split into two flights of two, similar to the US Marine Corps' division. However, all too often, IJNAF formations fell apart into an uncoordinated scramble in which each pilot relied on his own ability.

Throughout the Solomons campaign, poorly-performing radios badly hampered close teamwork which had been emphasized in the traditional three-fighter shotai combat structure. The competitive nature of Japanese sports also played to individualism in combat. American sports such as baseball and basketball emphasized teamwork, whereas Japanese athletic prowess in sumo, judo, and kendo emphasized performance of the individual.

Like their American counterparts, Japanese commanders also stressed the advantage of altitude. Pilots were also taught to aim for the cockpit of an opponent when opening fire. Finally, the Zero-sen's ability to out-maneuver its opponent was heavily emphasized, with skilled pilots using this advantage to maximum effect. Half-rolling turns were taught as an effective way of avoiding a high-speed pursuit, as was an inverted turn followed by a rapid descent. Both evasive stratagems were principally responsible for the on-average fourfold over-claiming by Corsair pilots against the Zero-sen in-theater.



Also airborne from Lakunai, 15 miles to the north of Tobera, were 33 A6Ms from the 204th Kokutai. These aircraft were mainly engaged by VMF-211 and VMF-223, and Capts J. W. Ireland and R. L. Hopkins from the latter unit claimed confirmed kills. Ireland fired at one fighter during a head-on pass, claiming that he saw it "flame, break up, and fall away." Hopkins had a surreal experience when a Zero-sen faltering under his guns turned onto its back the pilot fell halfway out of the cockpit, apparently dead. VMF-211 claimed only probables, thus making it likely that Ireland and Hopkins despatched the only two Zero-sens lost that the day, flown by 204th Kokutai pilots FPOs Hideshi Tanimoto and Yoshige Kitake.

Boyington claimed three victories during this last combat, two of which were unwitnessed. Total US claims were seven Zero-sens confirmed destroyed and five more as probables, whilst the A6M pilots claimed eight Corsairs and one Hellcat shot down. In reality, the actual losses show that this was another even fight, with each side having two aircraft shot down.

Knowing that Boyington had ditched, two divisions of Corsairs from VMF-214 took off from Torokina mid-afternoon and conducted an unsuccessful one-hour search for the downed ace. Boyington was subsequently sent to Japan as a PoW, returning home on September 12, 1945, when he was awarded the Congressional Medal of Honor.

Curiously, this particular aerial battle continued to be "fought" for decades after the war, when 253rd Kokutai participant FPO3c Masajiro Kawato migrated to the USA and later claimed it was he who had shot down Boyington. The unit's operations log confirms that "Mike" Kawato was indeed among Nakagawa's pilots that day, although due to his inexperience, he was flying the third aircraft in a four-fighter shotai, specifically assigned to fly overhead cover for those Zero-sens actually engaged in combat. Nonetheless, the legend attracted crowds at airshows, where Kawato and Boyington would set up stalls near each other selling their wares, and trade friendly barbs to their mutual benefit.

RABAUL – THE FINAL CAMPAIGN

Meanwhile, a relentless onslaught continued against Rabaul, with two strikes per day (including bombing and strafing missions) often being flown. This schedule was only ever interrupted by poor weather. Two particularly ferocious battles unfolded over Rabaul on January 30, 1944, the first taking place mid-morning and the second in the late afternoon. The latter mission was unexpectedly and hurriedly planned, resulting in operational losses. The Japanese defenders had by now become accustomed to the daily spectacle of overwhelming Allied air power. During a number of these strikes Corsairs were directly pitted against Zero-sens, offering useful benchmarks from which to draw comparisons.

A division of four F4U-1As from an unidentified US Marine Corps unit climb off the coast of Bougainville during January 1944. (Tony Holmes Collection)

On January 30, operations at Rabaul commenced when the 253rd Kokutai's FPO2c Masaru Moriyama led three Zero-sens on an uneventful one-hour dawn patrol over the Gazelle Peninsula. The rest of the morning remained quiet until the first Allied mission arrived overhead at 1115 hrs. Twenty-six B-25s from the 42nd BG, escorted by 47 Corsairs, hit both Lakunai airfield and the adjacent Rabaul township. They were followed 20 minutes later by Liberators, escorted by 15 P-38s and five F4Us from recently arrived VMF-217, that dropped fragmentation bombs across Vunakanau's revetments.

Five Corsairs had aborted en route, and during the return leg home 2Lt Robert Ranagan ditched when his engine failed. He was rescued from his dinghy later that night by the destroyer USS *Guest* (DD-472),

ENGAGING THE ENEMY

The Corsair enjoyed superior speed to all A6M models, especially at high altitude. This enabled US Marine Corps and US Navy pilots to accurately place concentrated bursts of 0.50-cal machine gun fire at close range, preferably during stern or high attacks. The Corsair was equipped with the ubiquitous US Navy Mk 8 reflector gunsight. This featured illuminated concentric rings that allowed pilots to calculate their distance from an opposing aircraft based on known target size. The reticule also stayed in alignment with the gunsight regardless of the viewer's eye azimuth. This removed most parallax and other associated sighting errors inherent in less sophisticated sighting devices. The site incorporated a leather-covered crash pad designed to protect the pilot's face in the event of a hard landing or ditching.

Corsair pilots in the Solomons focused on fighting efficiently via "hit and run" tactics. The big fighter's lack of maneuverability meant it could be out-fought by all models of A6M Zero-sen at slow speeds. However, height advantage enabled the Corsair to easily out-dive the Zero-sen, resulting in successful ambushes. Ideally, "dive and zoom" tactics were used where possible to mitigate against the F4U's principal weakness of getting caught "low and slow."

The Corsair's armament of six 0.50-cal wing-mounted machine guns made it more heavily armed than the Zero-sen thanks to the latter's lightly built and unarmored airframe. Nonetheless, a skilled Zero-sen pilot could avoid gunfire using aerobatic tactics, then try and entice the Corsair down to lower level, where its maneuverability could prove telling against the big gull-winged fighter. In such circumstances, a Zero-sen pilot with good gunnery skills could retaliate successfully against the Corsair, particularly if the F4U pilot found himself in a low-energy state.

A particular problem for both types in tropical theaters was that Perspex cockpits often fogged up badly at lower altitudes following rapid descents, especially in the Solomons' humid atmosphere with high lapse rates. Another effect of high humidity, particularly in the mornings, were white wispy vapor trails that often emanated from wingtip edges during high-G turns. Pilots from both sides often wrongly interpreted this as airframe damage that they had inflicted during combat.

transferred to a PT boat the next morning and returned to Torokina two days later. Ranagan was one of the lucky ones, for most Allied pilots who ditched that close to Rabaul were captured by the IJN.

Although the Zero-sens kept their distance from the Liberators and their VMF-217 escorts, this was not the case for the B-25s, whose Corsair escorts had a battle on their hands. The F4Us were in two groups, with a mixed formation of 27 aircraft from VF-17 and VMF-211 being led by Lt Cdr Tom Blackburn. The first group brushed off a gaggle of five Zero-sens, claiming one destroyed at 7,000ft after it dropped a 30kg phosphorous bomb that exploded spectacularly, but harmlessly.

In the second fighter echelon, and displaced to one side, 20 Corsairs from VMF-215 flew close to the B-25s as they undertook their bombing run over Rabaul township. The F4Us fought 29 Zero-sens, 11 from *Ryuho* and nine each from *Junyo* and *Hiyo*, two of which also dropped 30kg phosphorous bombs. VF-17 claimed five definite victories, although not a single Zero-sen was in fact shot down. In return, VMF-215's 2Lt John Fitzgerald was forced to bail out over the target and was captured. He would later die in captivity. Thus, this fighter battle, in numerical terms at least, saw the A6M again emerge victorious over the F4U.

During the attack, several B-25 crewmen were adamant they had seen an aircraft carrier at anchor in Simpson Harbor, and their report was soon in the keen hands of COMAIRSOL Intelligence. In response, Commander, Strike Command ordered a late afternoon mission against the alleged vessel. The timing of the operation was risky, for it meant the strike force would return to Torokina at night. Meanwhile, an expectant "Rabaul Air Force" was on high alert, with every available fighter on standby for an anticipated second strike. A handful of IJAAF Ki-61s from the 68th Sentai would also help defend Rabaul on this occasion, flying from Vunakanau.

The hastily assembled strike force comprised 30 TBF-1s and SBDs from VMSB-341, although exactly half these aircraft aborted due to engine issues. The rest bombed merchantmen and a destroyer, but failed to sight the non-existent carrier. The TBF crews later reported it was the heaviest anti-aircraft fire they had encountered to date over Rabaul, and one Avenger was lost.

For this return mission, VF-17 put up 15 Corsairs that were again led by Lt Cdr Tom Blackburn. VMF-215 sortied 17 F4Us, while VMF-217 got just four airborne. This time, they would be opposed by a combined formation of 26 A6Ms from all three land-based carrier Zero-sen detachments at Lakunai. The IJNAF fighters would be led into battle by *Junyo* buntaicho Lt Moriyasu Hidaka. *Junyo* and *Hiyo* each fielded eight aircraft, with the remaining ten coming from *Ryuho*. Separately, over at Tobera, the 253rd Kokutai launched 18 Zero-sens, four of which again carried 30kg phosphorous bombs.

These land-based carrier units subsequently lost four pilots in defiant defensive actions – FPO1c Hiroshi Arai from *Ryuho*, and Superior Flyer Toshio Furukawa and FPO1cs Katsu Kamori and Youji O'okuma from *Hiyo*. A 253rd Kokutai pilot was seriously wounded and landed at Lakunai with a badly shot-up Zero-sen, while the remaining 17 fighters returned home to Tobera. VMF-217 pilot 1Lt Lenihan experienced bad luck when a Zero-sen flew in front of him, offering an almost-perfect azimuth for his guns, only for all six weapons to fail at the critical moment. This squadron, whose pilots witnessed several aerial bombs explode, made no combat

claims. VMF-215's pilots, however, claimed 12 definites, two of which were mistakenly identified as Ki-44 "Tojos." VF-17 lost Lt Thomas Kropf, who went missing during the fight.

As predicted, the return to Torokina at night would see things go terribly wrong. Maj Robert Hopkins from VMF-211 was killed when his Corsair collided with the aircraft flown by VF-17 pilot 2Lt Douglas Gutenkunst in the circuit area overhead Piva Uncle airfield. Ens Wilbert Popp, also of VF-17, blew a tire in his battle-damaged fighter when he landed heavily, the Corsair being destroyed in the resulting crash. Popp emerged from the wreckage unhurt, however. The same thing happened to high-scoring ace Lt(jg) Ira Kepford. Another VF-17 loss was Lt(jg) Shelton Beacham, whose Corsair had been so badly shot up he chose to ditch offshore Torokina. He was rescued by a crash boat, the impact having broken his nose.

Although this F4U-1A from VMF-216 was struck by at least three 20mm cannon rounds fired by a Zero-sen on January 19, 1944, it was successfully flown back to Torokina by 1Lt Robert Marshall – seen here leaning on the shot-up right tailplane with his back to the camera. The shell hole in the star insignia on the fuselage is oval and oblique in shape, indicating that the A6M attacked from directly behind. (Author's Collection)

The Corsair pilots claimed a total of 20 Zero-sens and one "Tony" destroyed, although actual losses totaled five. In return, the Americans lost one TBF and six Corsairs, although some of the latter were operational losses during the night landings. Such inflated claims helped to underpin the origins of the Corsair "legend" in the Pacific.

By the end of January 1944, the 253rd Kokutai was the only remaining functional fighter unit on New Britain due to the severe attrition suffered during the near-ceaseless Allied bombing offensive. On February 18, 1944, Corsair pilot 2Lt Robert Schaeffer of VMF-222 was forced to bail out near Rabaul when a Zero-sen hit his cockpit with a 20mm shell. He ditched a mile offshore Cape Gazelle, from where he was rescued 20 hours later and delivered to Treasury Island with severe burns.

The following day saw the last gunfight unfold over Rabaul when 26 A6Ms (half of them Model 52s) led by Lt(jg) Shirosho Seiji of the 253rd Kokutai engaged an identical number of F4Us from VF-17 in a mid-morning one-hour fight. Led by Lt Cdr Tom Blackburn from Torokina, the Corsairs were escorting a strike force of 48 SBDs from VC-38, VMSB-241, and VB-98. The Dauntlesses dive-bombed Lakunai alongside 23 Avengers from VMTB-143, six of the TBFs carrying rockets to target anti-aircraft gun batteries.

This combined bombing force carried out their task unmolested and suffered no losses, mostly due to the aggressive Corsair escorts which reported meeting about 50 Zero-sens. Despite American claims of 13 fighters destroyed, only three A6Ms were lost in combat, after which they returned to Tobera at 1015 hrs.

This aircraft was the second "white 29" (BuNo 55995) assigned to high-scoring VF-17 ace Lt(jg) Ira Kepford, and it is seen here at Ondonga shortly after the fighter had received its new kill markings. Kepford's first "white 29" (BuNo 17684) was written off at Torokina following a fighter escort mission over Rabaul on January 30, 1944, the aircraft having been badly shot up by Zero-sens. The airframe was structurally damaged beyond repair when Kepford ground-looped on the runway. (Author's Collection)

Lt(jg) Ira Kepford of VF-17 was credited with 16 victories in the Solomons, ten of them "Zekes." (NHHC)

They scrambled again 15 minutes later to meet an incoming formation of 24 Liberators headed for Vunakanau, the heavy bombers being escorted by 36 Corsairs from VMF-216, VMF-217, and VMF-223. The only enemy contact eventuated at 19,000ft when a single Zero-sen dived on the last Corsair in the VMF-216 formation from the "four-o'clock position." The F4U was flown by 2Lt Summerfield Taylor, who pulled into a steep turning climb to meet the attacker. He then closed to 300 yards and fired at the Zero-sen, which reportedly started smoking, rolled onto its back, and dove steeply away. Taylor did not see it crash, and thus did not claim it. He re-joined the formation about ten minutes later. The timing of this attack indicates that Taylor's opponent was Superior Airman Teruyoshi Yoshihira, who returned wounded to Tobera with his Zero-sen shot up.

Meanwhile, the rest of the 253rd Kokutai warily patroled Rabaul's skies for an extended period, before returning to Tobera at 1600 hrs. Once on the ground, the Zero-sens flown by Superior Airman Hiroyoshi Yoshida and FPO2c Toshio Maeda required airframe repairs.

VF-17 division leader Lt(jg) Ira Kepford had a narrow escape during the mission. On approach to Rabaul, his wingman turned back with engine trouble, so Kepford decided to escort him home. However, minutes later, Kepford spotted an IJNAF floatplane moored offshore and accepted the temptation to strafe it. This diversion saw him besieged by a gaggle of enemy fighters, so he bolted northwards, but three of the determined Zero-sen pilots stayed with him.

With no wingman to help him, Kepford activated his Corsair's water injection – a new feature installed in several of the squadron's fighters to give a brief period of extra power. As luck would have it, the injector worked only intermittently, so he tried to lose his pursuers by descending to minimum altitude above the water. Still the trio stayed with him, so well north of Watom Island, but headed for New Ireland, he turned left violently, hoping to throw off his attackers. Kepford peered into his rearview mirror when turning, and he thought he saw one of his pursuers fly into the water while banking steeply. Kepford finally out-ran the remaining two pursuers to make it home unscathed.

It was VF-17 Corsairs that shot down the last Zero-sen pilot – Superior Flyer Saichi Yamaguchi – to fall in the defense of Rabaul. Two more 253rd Kokutai pilots – FPO2c Masayoshi Matsuda and FPO2c Masaki Nakahira – went missing during the battle. If Kepford did indeed see a Zero-sen hit the water, it was one of these two pilots. Both sides made extravagant claims. VF-17 was credited with 13 Zero-sens destroyed, against an actual score of three. The IJNAF pilots outdid their American counterparts, however, claiming one Liberator, seven Corsairs, one Hellcat, and two TBFs destroyed. In fact not one Allied aircraft was lost.

STATISTICS AND ANALYSIS

Although reliable IJNAF statistical data for Zero-sen victories and combat losses during the defense of Rabaul in 1943–44 is well-documented in operational logs for the units involved, this is not the case for non-combat losses. Details on both types of losses are, however, readily available for the Corsair.

The statistics in this chapter are compiled from the first day the F4U entered combat in-theater, on February 12, 1943, through to the last major air action over Rabaul on February 19, 1944 – a timeframe which neatly encapsulates the Corsair's first year in combat. Although the fighter continued to serve in the South Pacific through to war's end, this volume only focuses on the first-year timeframe, as aerial combat with any type of Japanese aircraft, let alone the Zero-sen, was a rare occurrence after Rabaul was neutralized.

In this first year of combat, 671 land-based Corsairs served with the following US Marine Corps and US Navy squadrons – VF-17, VMF-112, VMF-122, VMF-123, VMF-124, VMF-211, VMF-212, VMF-213, VMF-214, VMF-215, VMF-216, VMF-217, VMF-218, VMF-221, VMF-222, VMF-223, VMF-321, and VMF-75N.

An examination of records listing every Corsair airframe delivered to the theater against every loss reveals statistics that contradict the established historical narrative. Of the 129 Corsairs shot down, 78 pilots lost their lives and 51 survived thanks to committed rescue capabilities and a friendly local population. A further eight pilots and Corsairs were lost to enemy ground fire. Two F4Us were probably shot down by friendly fire, although both pilots survived. The one confirmed case of friendly fire occurred on August 12, 1943 when Capt William Deming of VMF-215 was forced

to bail out when his starboard wing exploded and fell away after being hit by a US artillery shell overhead Munda.

Eight Corsair pilots became PoWs at Rabaul, although only two of them survived Japanese captivity – VMF-214 CO Maj Gregory Boyington and Maj Donald Boyle of VMF-212, both of whom were repatriated from Tokyo camps after the war. 1Lt Charles Lanphier, also from VMF-214, was shot down over Rabaul on August 28, 1943 and died in captivity. He was the brother of ace Capt Thomas Lanphier Jr who led "Killer" flight in the April 18, 1943 Yamamoto mission, the P-38 pilot claiming that he downed Admiral Isoroku Yamamoto's "Betty" bomber. On the evening of the successful mission, Charles visited his brother Thomas in VMF-214's camp area at Fighter 1 on Guadalcanal and told him and his squadronmates about the secret operation.

Perhaps surprisingly, the attrition records clearly show that a pilot was more likely to lose a Corsair operationally than in combat – 175 were lost to operational causes, including weather, resulting in 41 deaths. Some operational losses were specifically related to failure of "accessories," and not directly associated with the airframe. For example, on July 3, 1943 at Banika Field, on the Russell Islands, VMF-122's Capt Richard Rasmussen was critically burned when his Corsair blew up as he was starting the engine for a Rendova patrol. The incident was caused by spilled petrol igniting when the shotgun starter cartridge was fired, burning Rasmussen in the cockpit before he could get out.

Several other operational fatalities were caused by faulty oxygen systems. On July 26, 1943, the Corsair of VMF-215's Capt Gerald Pickeral started swaying in formation on the way to Kahili during an escort mission. The fighter then dove almost vertically from 22,000ft into the water. It was believed that Pickerel had suffered oxygen failure.

One final data sample that proves just how dangerous the South Pacific theater was for early F4U pilots in 1943–44 reveals that during the Corsair's first frontline tour of six weeks' duration from February 12 to April 2, 1943, VMF-124 had three aircraft shot down by Zero-sens and ten lost to operational causes.

Despite an eclectic mix of other US Navy, RNZAF and USAAF fighter units in-theater that made similar and sometimes duplicate claims – often during the same engagements – in 1943–44, a study of all major Corsair versus Zero-sen confrontations is both feasible and reliable. This is largely due to the close alignment of IJNAF operational records and timeframes with Corsair unit mission logs. In this decisive first year, the ratio of actual kills scored by either type is one-to-one. The combined official COMAIRSOL claims ratio for Allied fighters versus the Zero-sen in the same period is a wildly inaccurate four-to-one. The IJNAF ratio for claims against Allied fighters in 1943–44 is even higher, being an overly optimistic five-to-one.

The Corsair was a demanding aircraft to fly, as proven by this VMF-124 mishap while landing at an airfield in the Solomons in late 1943. It was one of 175 F4Us lost operationally – rather than as a direct result of enemy action – in-theater in the first full year of combat with the Corsair. (NHHC)

ACE ANALYSIS

Dubbed the "Fighting Irishman of Marine Aviation" by the press, 1Lt Ken Walsh of VMF-124 claimed 20 victories during three tours in seven months in the Solomons in 1943. The very first Corsair ace, he provided the following analysis of how to fight a Zero-sen with the F4U:

1Lt Ken Walsh had experienced seven years of frontline flying before deploying to Guadalcanal with VMF-124 at the age of 26. He became the first Corsair ace, opening his score with three victories on April 1, 1943. (Tony Holmes Collection)

Being the first unit to go into action in the Corsair, we didn't know exactly how to employ it, so we had to establish a doctrine. We knew that there would be many other Corsair squadrons following us, and they would want to know what we did, and how we did it. They would then be able to augment our experience and develop their own tactics. I had asked one very experienced Wildcat pilot, who had made quite a name for himself during the early days of Guadalcanal, how to go about combat with the Zero. All he said was "you've gotta' go after them." Well, we knew it would take more than that!

I learned quickly that altitude was paramount. Whoever had altitude dictated the terms of the battle, and there was nothing a Zero pilot could do to change that – we had him. The F4U could out-perform the Zero in every aspect except slow speed maneuverability and slow speed rate of climb. Therefore, you avoided getting slow when combating a Zero. It took time, but eventually we developed tactics and employed them very effectively.

When we were accustomed to the area, and knew our capabilities, there were instances when the Zero was little more than a victim. I came to know the Zero, and I learned how to attack it. Being in my seventh consecutive year of frontline flying, I knew how to fire the guns and how to use our Mk 8 gunsight. The guns were boresighted to 1,000ft. The electric sight had rings covering so many mils, 1000ft equalling one mil. We had six 0.50-cal guns with 400 rounds per gun, and a rate of fire of 800 rounds per minute. Our belt loading was one incendiary, one tracer, and one armor piercing. A two-second burst would fire 150 rounds, and the Zero, like most Japanese aircraft, had no armor plating or self-sealing tanks. So, if you hit them, they'd burn, with their aluminum construction including magnesium parts, which added further fuel to the fire. You can imagine what would happen if you got 30 or 40 hits on them.

There were times, however, that I tangled with a Zero at slow speed, one-on-one. In these instances, I considered myself fortunate to survive a battle. Of my 21 victories, 17 were against Zeros, and I lost five aircraft as a result of combat. I was shot down three times, and I crashed one that plowed into the line back as base and wiped out another F4U. I was shot-up at least a dozen times, but usually the aircraft could be repaired. The times that I really got into trouble came about due to the Zero that I didn't see, and, conversely, I'm sure that with most of the kills I got, they didn't see me. So, when new units came up behind us, we told them what we had learned. Everything was a calculated risk, but I had a lot more to tell them about than just "you gotta' go after them!"

AFTERMATH

As the Allied pincers closed on Rabaul, back in Japan, a patriotic war song was composed titled "Souretsu! Okamoto Butai" (Behold the Heroic Okamoto air unit). It glorified the heroic achievements of the 253rd Kokutai – the last unit to defend Rabaul – under the leadership of Lt Cdr Harutoshi Okamoto. A unique quirk of fate saw the officer who introduced the Zero-sen to the theater (when leading the 4th Kokutai to Rabaul in early 1942) also oversee its demise.

Not long after Lt Cdr Okamoto Harutoshi was appointed the 253rd Kokutai's new hikotaicho at Saipan on August 18, 1943, he moved down to Rabaul. The importance of Okamoto and his contribution to the Rabaul air war cannot be overstated. He was an original and key architect in the structure and tactics employed by IJNAF fighters in the Pacific.

Then Lt Okamoto was the first air commander to arrive at on January 26, 1942 when he led the "Okamoto Butai" – two detachments of Chitose Kokutai A5M4s – to Lakunai airfield. The following month, on February 28, he had led the first Zero-sen strike against Port Moresby. In early September 1943, Okamoto returned to Rabaul, this time to Tobera airfield. Rather than offensive operations, Okamoto's pilots had to defend Rabaul, first by countering the October–November 1943 campaigns by the Fifth Air Force and then later strikes by Solomons-based US Navy, US Marine Corps, and USAAF units. During that timeframe the 253rd Kokutai was also a major participant in Operation *Ro-Go* – the aerial attempt to defeat the American occupation of Bougainville.

Okamoto remained hikotaicho throughout this challenging time, right up until the end of January 1944, when he was replaced by Lt Hirano Tatsuo. Unbeknownst to the Allies, the IJNAF had chosen to withdraw all air units from Rabaul in the next few weeks, and Combined Fleet had decided that Okamoto, his job done, would be required for the next defensive stage of the Pacific War.

The last day of major fighter combat over Rabaul unfolded during the mid-morning of February 19, 1944 when 26 Zero-sens from the 253rd Kokutai took on 24 F4Us from VF-17 in an engagement that lasted nearly an hour. In the early morning hours of February 20, the IJNAF initiated its evacuation plan as the majority of the 253rd Kokutai's Zero-sens prepared to retreat to Truk. The unit's 23 remaining serviceable fighters departed Tobera at 0630 hrs for a four-and-a-half-hour flight led by a "Betty" bomber. Two more followed separately at 1130 hrs.

Seen at Rabaul in January 1945, these pilots flew with the 105th Naval Base Air Unit headed by Cdr Hori Tomoyoshi. Following the evacuation of air power from Rabaul commencing February 20, 1944, 15 Zero-sens were left behind marked for repair. Standing third from left is former 253rd Kokutai pilot FP03c Masajiro Kawato, who falsely claimed post-war to have shot down VMF-214 CO Maj Greg Boyington. (Author's Collection)

Vice Admiral Jinichi Kusaka, commander of the 11th Air Fleet, traveled to Tobera to farewell the fighters. The decision to immediately withdraw Rabaul's air power had been made by Admiral Mineichi Koga in response to a series of massive carrier strikes against Truk. Although Koga had assured Kusaka that the Zero-sens would eventually return to Rabaul, the latter's instincts told him that Tokyo had abandoned Rabaul. The orderly departure of aircraft, pilots, and groundcrew to Truk took five days to complete. The Zero-sens were followed to Truk by six "Bettys," eight "Vals," ten D4Y "Judys," and six "Kates." Almost to the day, one year after the Corsair had arrived in-theater the Zero-sen was now exiting it.

Kusaka gave orders to the 105th Naval Base Air Unit, headed by Cdr Hori Tomoyoshi, to render airworthy the 15 Zero-sens left behind undergoing repairs. A handful of veteran pilots also stayed on, supplemented by around 30 inexperienced ones, many of whom could not travel due to incapacitation through illness. This motley inventory of decrepit machines also included one Ki-46 "Dinah," four "Irvings" from the decommissioned 151st Kokutai, and a handful of unserviceable "Mavis" flying boats. The A6Ms of the small 253rd Kokutai detachment did become airworthy over the following weeks, with as many as eight aircraft initially undertaking patrols and offensive missions. Their number had been whittled down to a mere handful of fighters due to a lack of spares and battle damage by war's end.

On August 15, 1945, Emperor Hirohito formally announced Japan's surrender over the radio. Later that same afternoon, Vice Admiral Jinichi Kusaka summoned his staff to his headquarters. He repeated the Emperor's speech, and then gave instructions to the assembled servicemen. During this speech, words often died on his lips, and he was moved to tears, as were his staff. The pilots and engineers of the 105th Naval Base Air Unit were assembled as a unit and then the details of

This late A6M3 Model 22 was one of three Zero-sens from the 105th Naval Base Air Unit captured at Rabaul at the end of hostilities. Later flown to Jacquinot Bay on September 18, 1945, it is seen here before the fighter was painted white overall and the hinomaru marked with green crosses as part of the Allied terms of surrender. (Author's Collection)

the surrender were given to them. Many wept bitterly, and that night several committed suicide.

Combined Fleet issued a separate and explicit directive that all fighting must cease immediately, otherwise violation of the surrender terms would have serious consequences for Japan. Nevertheless, some diehards at Rabaul vowed to continue to oppose the Allies. Their inventory of aircraft at the time of the surrender was three Zero-sens, one "Kate," one "Dinah," and two "Jake" reconnaissance floatplanes. Kusaka despatched senior officers to visit each unit to dissuade the men from fighting. Eventually, Rabaul became calm, and its Japanese occupants, numbering around 80,000 personnel, stoically awaited the arrival of the occupation forces, who did not reach New Britain until the following month.

In time, the handful of surviving aircraft were surrendered. On September 18, 1945, WO Yasushi Shimbo led FPOs Gensaku Aoki and Yoshio Otsuki in three captured Zero-sens to Jacquinot Bay, also in New Britain. A single "Dinah" was also part of their shotai, and the Japanese aircraft were escorted by 16 Australian Kittyhawks. When the A6Ms landed, the pilots clambered out of their cockpits and saluted briskly. The curious Australian and New Zealand personnel present ignored them. The pilots were frisked for weapons, and shotaicho Shimbo presented a duplicate receipt for the aircraft. Shimbo was supposed to keep a copy for his seniors but the recipients kept both copies in a slight that disquieted the IJNAF pilots, who were escorted to a Catalina and flown back to Rabaul.

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OSPREY PUBLISHING
Bloomsbury Publishing Plc
Kemp House, Chawley Park, Cumnor Hill, Oxford, OX2 9PH, UK
29 Earlsfort Terrace, Dublin 2, Ireland
1385 Broadway, 5th Floor, New York, NY 10018, USA
E-mail; info@ospreypublishing.com
www.ospreypublishing.com

OSPREY is a trademark of Osprey Publishing Ltd

First published in Great Britain in 2022
This electronic edition published in 2022 by Bloomsbury Publishing Plc

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A catalog record for this book is available from the British Library.

ISBN: PB 9781472850614; eBook 9781472850591;
ePDF 9781472850607; XML 9781472850621

Edited by Tony Holmes
Cover artwork and battlescene by Gareth Hector
Three-views, cockpit views, Engaging the Enemy and armament scrap views by Jim Laurier
Maps and formation diagrams by www.bounford.com
Index by Zoe Ross
Typeset by PDQ Digital Media Solutions, Bungay, UK

Osprey Publishing supports the Woodland Trust, the UK's leading woodland conservation charity.

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F4U-1A cover artwork
One of 24 Corsairs from VMF-214 takes on an A6M2 Zero-sen from the 201st Kokutai over southern Bougainville on September 16, 1943. The American fighters, led by unit CO Maj Gregory Boyington, were joined by 33 land-based F6F-3 Hellcats from VF-38 and 12 USAAF and RNZAF Warhawks. The fighters had been tasked with escorting TBF Avengers on a strike against the Japanese airfield on Ballale Island. Zero-sens assigned to the 201st and 204th Kokutai attacked the Allied formations, after which Boyington was awarded five confirmed victories from a total of 19 claimed by the Corsair pilots. The Warhawk and Hellcat pilots were credited with five more, for a total Allied claim of 24 Japanese fighters. In reality, only six A6Ms had been shot down. Most fighter-versus-fighter engagements in the Solomons throughout 1943 saw fairly even numbers lost by either side. This day was no exception, with six Zero-sens being downed for the loss of a Corsair, four Hellcats, and an Avenger. (Cover artwork by Gareth Hector)

A6M2 cover artwork
1Lt Gordon Lyon of VMF-124 engages the 204th Kokutai Zero-sen T2/1163 flown by WO Hatsuo Hidaka at close quarters over Bougainville on February 14, 1943. The first two Corsairs lost to combat occurred on this date whilst VMF-124 was escorting Liberators on a shipping strike against vessels off Kahili, on Bougainville. American units lost nine aircraft in total – one F-5A, four P-38s, two Corsairs, and two Liberators. The debacle, known throughout the theater as the "Saint Valentine's Day Massacre", showcased IJNAF fighter tactics. While 13 Zero-sens from the 204th Kokutai tried to reach the Liberators, 11 A6M2-N Rufes of the 802nd Kokutai were also scrambled from nearby Poporang Island. A further 18 Zero-sens from the 252nd Kokutai, based at Ballale airfield, also engaged the enemy aircraft. During the intense combat that ensued, 1Lt Gordon Lyon's F4U-1 (BuNo 02187) collided with the Zero-sen of the 252nd Kokutai pilot FPO2c Yoshio Yoshida. The second Corsair loss (BuNo 02249) occurred when 1Lt Harold Stewart re-joined his element leader after the fight at about 20,000ft. His F4U was seen to be trailing fuel vapor from bullet holes in a wing tank, and when the latter ran dry Stewart was forced to ditch. Zero-sens subsequently strafed his raft, and the downed pilot was never seen again. (Cover artwork by Gareth Hector)

Title Page
Standing third from left, Maj Greg Weissenberger, the CO of VMF-213, briefs two divisions for a mission from Guadalcanal in May–June 1943. He claimed five Zero-sens destroyed in three actions, and he was also shot down by one on June 30, 1943. (Tony Holmes Collection)